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THE INFLUENCE OF AGE, GENDER, AND LEISURE ON THE LIFE
SATISFACTION OF WIDOWED OLDER ADULTS

A DISSERTATION

Submitted to the Faculty of
Montclair State University in partial fulfillment
of the requirements
for the degree of Doctor of Philosophy

by

MARCELA KEPIC

Montclair State University

Upper Montclair, NJ

2016

Dissertation Chair: Dr. Harriet L. Glosoff

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MONTCLAIR STATE UNIVERSITY

THE GRADUATE SCHOOL

DISSERTATION APPROVAL

We hereby approve the Dissertation

THE INFLUENCE OF AGE, GENDER, AND LEISURE ON THE LIFE

SATISFACTION OF WIDOWED OLDER ADULTS

of

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ABSTRACT

THE INFLUENCE OF AGE, GENDER, AND LEISURE ON THE LIFE SATISFACTION OF WIDOWED OLDER ADULTS

by Marcela Kepic

Spousal loss can be a stressful life event for older adults and a difficult experience that affects daily life and life satisfaction of older adults. Life satisfaction is considered an important part of successful aging. The purpose of this study was to examine how participation in leisure activities, a person's gender, and time since spousal loss influence life satisfaction of widowed older adults. A sample of 222 widowed older adults selected from the Americans Changing Lives (ACL) dataset was used in order to determine the relationship and impact of predictor variables on time since spousal loss, change in physical leisure participation, and gender on changes in life satisfaction of widowed older adults. Correlation analysis showed no significant relationship between time since spousal loss and life satisfaction change; however, analyses of gender, age at time of spousal loss, and change in physical leisure participation resulted in statistically significant relationships. Further, the results of a multiple regression analysis suggest that age at time of loss, changes in physical participation, and being female are the greatest predictors of widowed older adults' life satisfaction. Finally, gender does not seem to be a moderator between changes in physical participation and life satisfaction change. The meaningfulness of statistical significance of such results was explored and implications for these findings and suggestions for future research were discussed.

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To my family, thank you mom and dad for your continuous help with babysitting my precious son and your wonderful grandson David. It has been a challenging but rewarding journey for all of us and I appreciate the time you have invested when I was attending classes, conferences, or teaching. Because of your help with David, I was able to accomplish my lifelong dream of becoming a doctor in counseling field.

DEDICATION

Completing a doctoral degree was one of my long-term goals and I am proud to say that I have had fulfilled it with help of many. I would have not done it without a wonderful team of Montclair State University faculty and staff, doctoral friends, colleagues and friends, and my family. Words cannot describe how thankful I am to all who helped me solidify my career, broaden my knowledge, sharpen my clinical skills, and deepen my expertise in professional counseling, counselor education, supervision, and leadership.

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I am a strong believer in resiliency, positivity, happenstance, and choices in life. We are our choices. Throughout this doctoral journey, I made sure that every choice I made would be beneficial to you in a long run. You were, you are, and you always will be my priority, no matter what other goals I might have in my life. You and your greatness continue to be my priority. Many professors, mentors, friends and family helped me along this way, but you were my strongest inspiration and motivation to overcome challenges, to fight adversities, to rise above criticism, and to finish this journey for both of us. I am far from perfect, but because of you, I am a better person today and because of you I will be even better person tomorrow. I have done my best to be the best parent and the best friend I could be and, as my roles will change as you grow older, I will be there for you in whatever role you need me to be. Thank you for being the greatest son ever!

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The Influence of Age, Gender, and Leisure on the
Life Satisfaction of Widowed Older Adults

Chapter One

Introduction

Life satisfaction is an essential part of successful aging (Cavan, Burgees, Havighurst, & Goldhammer, 1949; Collette, 1984; Neugarten, Havighurst, & Tobin, 1961; Stevens-Ratchford, 2011). The older population in the United States (U.S.) is on the rise and it is projected that by 2040 there will be close to 80 million older adults in the U.S., and older adults will make up 20% of the total population (Administration on Aging, 2010). Not only is the older population on the rise, but also older adults are living longer (Aldwin & Gilmer, 2013). Because the U.S. population is rapidly aging, it is important to understand adult development in later years and what might impact later adult life satisfaction. Further, it is crucial to understand the relationship among factors that might impact adjustment to serious life events and the impact of such factors on life satisfaction in later life.

Older adulthood is a period of time filled with many gains and losses that require some level of adjustment. For example, many older adults advance their knowledge and skills and the variety of their life experience can be enormous. Such rich life experiences might serve a great benefit to older adults and others. On the other hand, older adults may experience physical (e.g., vision, hearing), cognitive (e.g., processing speed slows down), and social changes (e.g., retirement, widowhood) that can adversely impact their daily functioning resulting in less independence. One of the social changes considered as a

loss requiring adjustment in later adulthood is the loss of a family member, especially a spouse. Regardless of the conditions surrounding the death of a spouse, such an event that changes one's life circumstances requires some level of transition and adaptation.

Furthermore, life events such as becoming widowed can lead to experiences of isolation, anxiety, despair, depression, and overall lack of life satisfaction (Lee & DeMaris, 2007; Onrust & Cuijpers, 2006). There are, however, many factors such as social support, leisure participation, and engagement in physical activities, which can help to sustain older adults' well-being, (Tomas, Sancho, Gutierrez, & Galiana, 2014).

Life satisfaction is also a primary factor of well-being (Diener, Sue, Lucas, & Smith, 1999; Ranzijn & Luszcz, 2000). The literature indicates that well-being is integrally related to successful aging (Aldwin & Gilmer, 2013; Franklin & Tate, 2009, Rowe & Kahn, 1999) because both continued overall health and continued well-being provide the bases for high functioning and continued engagement with life components. Life events, such as the loss of a spouse can impact older adults' engagement with life (Hao, 2008; Morrow-Howell, Hong, & Tang, 2009). In turn, the loss of a spouse can adversely affect life satisfaction and therefore successful aging (Lucas, Clark, Georgellis, & Diener, 2003; van Baarsen & van Groenou, 2001).

Bonanno and colleagues (2002) suggested that after some period of adjustment to a major loss, life satisfaction of older adults might improve with time. Conversely, some researchers (e.g., Lucas, et al., 2003; van Baarsen & van Groenou, 2001) have suggested that the adjustment to loss and return to pre-loss levels of life satisfaction might take up to eight years for widowed older adults and that some older adults do not ever return to

their pre-loss levels of life satisfaction. Rather, they form a new baseline for life satisfaction after the death of a spouse (Lucas, et al., 2003; van Baarsen & van Groenou, 2001). Although some factors can have an adverse influence on successful aging and therefore life satisfaction, other factors can be considered as protective, or those that can help older adults age and balance successful or optimal aging. Such factors include participation in life and meaningful leisure activities (Hasselkus, 2002; Vaillant, 2002). Furthermore, when dealing with the loss of a spouse, researchers have indicated that being active and involved in leisure participation might have positive effects on adjustment to widowhood and overall life satisfaction; specifically, widowed older adults who engage in leisure activities may experience decreased feelings of isolation and maintain or improve their general sense of well-being (Hao, 2008; Morrow-Howell et al., 2009).

The majority of the previous researchers have addressed participation in leisure activities as the time increases post spousal loss and the possible influence of gender in adjustment to such losses. For example, Caserta (2002) suggested that men benefit from the social support of a wife, and that such support might serve as a protective factor from life stresses. When a man loses his spouse he is twice as likely as a woman to die within the first 6 to 12 months of the death of his spouse (Harvard Men's Health Watch, 2010). Men may be more vulnerable to death shortly after losing a spouse. Other researchers have reported that widowers experience higher levels of depressive symptoms than widows (Stroebe, Hansson, Stroebe, & Schut, 2001), which might be due to a greater challenge in coping with spousal loss compared to the challenges experienced by widows

(Bennett, Smith, & Hughes, 2005). Thus, in times of loss men might suffer more acutely than women who might have a greater, more extensive social support network. However, other researchers (Holtslander, Bally, & Steeves, 2011; Rodgers, 2004; Wilson & Supiano, 2011) indicated that women have to develop a new identity as widows, including mastering new skills, new roles, and new lives, which presents greater challenges for women than for men and requires a high level of adjustment.

To conclude, many researchers have investigated the influence of gender on life satisfaction of widowed older adults and other researchers has investigated the influence of leisure participation in widowhood. In my dissertation, I combined such variables into one study and investigated the influences of time since spousal and leisure participation on life satisfaction of widowed older adults while considering gender differences.

Theoretical Background

Life satisfaction across the life span has been found to be remarkably stable during early and middle adulthood (Diener & Suh, 1998; Mroczek & Spiro, 2005) and then to decline in older adulthood (Gerstorf, Ram, Estabrook, Schupp, Wagner, & Lindenberger, 2008). Present life span developmental theorists have challenged this simple view of human development in later years and suggested that human development in older age is a very dynamic and intertwined process with multidimensional and multidirectional aspects (Baltes, 1987). Further, adherents to theories of successful/optimal aging, defined as the ability to maintain low risk of disease, high physical and mental functioning, and active engagement with life (Rowe & Kahn, 1998), attempt not only to describe how people transition into and adapt to changes associated

with aging, but also predict whether older adults' adaptation to life events will result in successful aging (Bergstrom & Holmes, 2000). One widely accepted contemporary theory of successful aging is Rowe and Khan's (1998) who defined successful aging as the ability to maintain low risk of disease, high physical and mental functioning, and active engagement with life. Vaillant's (2002) extended Rowe and Kahn's model to include three additional criteria for optimal aging: 1) participating in social activities; 2) having social support; and 3) having life satisfaction in many domains.

It is imperative to consider multiple factors influencing the aging processes in older adulthood as well as their interplay, such as influences of gender and of chronic disease on social participation. Male and females might participate in different types of activities based on the gender socialization earlier in life resulting in different ways of successful/optimal aging. When loss occurs in older adulthood, not only the loss requires adaptation, but the way older adults adapt to such loss might vary and, therefore, their life satisfaction after the loss might be different. For instance, after losing a spouse, some older adults might become isolated, especially if their partner was responsible for all social connections and social activities. If the surviving spouse is a male, he might feel disconnected from social activities and therefore isolated. If the surviving spouse is a female, she might maintain the social connections (Rodgers, 2004); however, she might feel overwhelmed by managing the household, finances, and transportation (Wilson & Supiano, 2011).

Considering multidimensional and multidirectional aging development and aging process in older years, two aging theories encompass the above mentioned interplay of

myriad factors: 1) continuity theory (Atchley, 1989), and, 2) selective optimization and compensation theory (SOC; Baltes & Baltes, 1990). The authors of continuity theory posited that people wish to maintain participation in the same activities they had enjoyed during their life course with continuity serving as the primary adaptive strategy for dealing with changes associated with normal aging (Atchley, 1989). Baltes, the author of SOC theory, stressed the balance between gains and losses in the aging process. Baltes (1987) described aging as a process, rather than as a series of stages. When there are limited or reduced resources, Baltes (1987) contended that older adults need to select goals or activities they wish to pursue and optimize their performance by applying resources to those particular goals, while compensating for any deficiencies that could interfere with achieving their goals (e.g., life satisfaction after spousal loss). For example, older adults might choose to jog or walk instead of running or might take the elevator instead of taking the stairs. They still continue being engaged in physical activity but modify activities to fit their physical needs. Further details of these two theories are provided in chapter two with an emphasis on SOC theory as it provides a framework for this research study.

Statement of the Problem

Life satisfaction is an imperative component of successful/optimal aging in older adulthood (Cavan et al., 1949; Collette, 1984; Diener, 2009; Neugarten et al., 1961; Stevens-Ratchoford, 2011). The loss of a spouse is considered an adverse life event, which can greatly impact life satisfaction and that requires adaptation of a surviving spouse. Widows, when compared to non-widowed older adults, tend to have a greater

decline in physical health, mental health and social functioning (Chen, Bierhals, Prigerson, Kasl, Mazure, & Jacobs, 1999; Wilcox, Evenson, Aragaki, Wassertheil-Smoller, Mouton, & Loevinger, 2003). Grieving and bereavement typically associated with the loss of a spouse or partner through death has been associated with negative effects on older adults' well-being and, therefore, with life satisfaction (Hagedoorn, van Yperen, Coyne, van Jaarsveld, Ranchor, van Sonderen, & Sanderman, 2006; Wilcox et al., 2003). Considering that the older adult population is on the rise, it is likely that every year there will be more older adults facing widowhood.

Events such as becoming widowed and the accompanying changes in one's life circumstances require some level of adaptation. People may react strongly to widowhood but after some time the majority eventually return to their initial (pre-loss) levels of life satisfaction (Lucas et al., 2003). Researchers (Lucas, et al., 2003; van Baarsen & van Groenou, 2001) have also noted that adaptation time to a spousal loss varies in older adults and that the whole process of adaptation might take several years.

Of primary interest to me in conducting my study was knowing about the length of time that it takes an older person (e.g., someone age 65 years and older) to adapt to widowhood and associated factors that can ease the transition in order to improve their life satisfaction. After losing a spouse older adults usually feel isolated, withdrawn, anxious, despair, depressed, and overall tend to experience a lack of life satisfaction (Lee & DeMaris, 2007; Onrust & Cuijpers, 2006). On the other hand, research focused on avoiding premature illness and disabilities, as well as developing protective factors, indicates that participation in leisure activities can provide a positive context for

adjustment to negative life circumstances by restoring a sense of well-being and of social connectedness (Diener, 2009; Kleiber, Hutchinson, & Williams, 2002; Ong, Bergeman, & Bisconti, 2004; Patterson, 1996). Such protective factors might include leisure participation and gender.

There are conflicting research results about the time older adults take to adapt to widowhood and feel satisfaction in their lives. Although researchers (Lucas, Clark, Georgellis, & Diener, 2003) have noted that there is a relationship established between the loss of a spouse and life satisfaction, the time it takes for widowed older adults to adapt to such loss is inconclusive (e.g., varying from a few months to several years) (van Baarsen & van Groenou, 2001). Moreover, despite the fact that factors such as leisure participation and gender have been found to be protective factors in widowhood (Janke et al., 2008; Nimrod, et al., 2009), current literature does not address the roles these factors play in relation to the overall life satisfaction of widowed older adults while considering the time passed since spousal loss.

Purpose of the Study

Literature about life satisfaction of widowed older adults seems to be contradictory and inconclusive with gaps about the effects of some protective factors, such as time since spousal loss and types of leisure participation (van Baarsen & van Groenou, 2001). One shortcoming of much of the literature is that it deals with the levels of life satisfaction of widowed adults utilizing life satisfaction prior to widowhood as one of the predictor variables. While there is undoubtedly a strong correlation between a person's level life satisfaction before and after loss of a spouse, this significant

relationship may mask the impact that other factors may have on the level of post-widowhood life satisfaction. As a result, I created a variable, *life satisfaction change*, measuring the difference in the level of life satisfaction after and before spousal loss, respectively. By utilizing the life satisfaction change variable in my analyses, my hope was to better detect and highlight the contributions of other relevant factors that affect the well-being of widowed older adults.

In a similar manner, I chose to examine the level of involvement in leisure activities prior to and after spousal loss. I considered prior and later leisure participation important because individuals' level of leisure involvement after becoming widowed may be influenced by their involvement in leisure pursuits prior to such loss. Therefore, to be a meaningful predictor variable of overall life satisfaction change, I decided to use the change in the level of leisure participation following spousal loss as one of the variables in this study. As such, one goal of this study was to investigate the association between the time since spousal loss and life satisfaction change (post-loss versus pre-loss) in widowed older adults.

To better understand the impact of leisure participation on life satisfaction of widowed older adults, leisure activities were subdivided between physical and non-physical. Hence this researcher considered two separate leisure participation change variables: 1) physical leisure activities, and 2) non-physical leisure pursuits.

In addition, participation in leisure activities can provide a positive realm for adjustment to negative life circumstances (e.g., loss of a spouse) by restoring a sense of well-being and social connectedness (Kleiber, Hutchinson, & Williams, 2002; Ong et al.,

2004; Patterson, 1996). A second goal of this study was to explore the relationship between physical leisure participation change (post-loss versus pre-loss) and changes in levels of life satisfaction (post-loss versus pre-loss).

According to Aldwin and Gilmer (2013), more women than men become widowed at an earlier age (12% of widowed men as compared to 37% of widowed women). In addition, women as compared to men are less likely to remarry and therefore tend to stay widowed for a longer period of time (Aldwin & Gilmer, 2013). Not only will there be more women surviving their spouses, they might be dealing differently with spousal loss as compared to men.

Many men and women tend to participate in slightly different activities. For example, Janke, Davey, and Kleiber (2006) found that men tend to select more physical and individual activities, whereas women tend to prefer socializing with friends and others, and participate in formal leisure activities (e.g., volunteering) as compared to men. Due to such gender differences, the third goal of my study was to investigate a relationship between life satisfaction change (post-loss versus pre-loss) and being female. Finally, the fourth goal of this research was to investigate if there is a potential relationship between changes in life satisfaction (post-loss versus pre-loss) and changes in physical leisure participation differ between females and males.

Examination of life satisfaction change after various times since spousal loss with influencing factors such as leisure participation and gender may provide further insight to understanding life satisfaction in widowhood and therefore influence proactive approaches in counseling when dealing with older adults who are most likely to

experience such loss. In the next section, I provide the research questions that guided my study.

Primary Research Questions

In this study I examined the relationship between the time since spousal loss and life satisfaction change of widowed older adults while considering the influences of leisure participation change (e.g., physical leisure) and gender. The research questions under investigation for this study were:

- 1) What is the relationship between life satisfaction change (post-loss versus pre-loss) and the time since spousal loss?
- 2) Is there a relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change (post-loss versus pre-loss)?
- 3) Is there a relationship between life satisfaction change (post-loss versus pre-loss) and being female?
- 4) Does the relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change differ between females and males?

Significance of the Study

Life satisfaction of older adults continues to be a significant factor examined by many researchers in relation to leisure participation and gender. Loss of a spouse can significantly affect life satisfaction in older adulthood (Diener, 200; Hagedoorn et al., 2006; Wilcox, et al., 2003). With conflicting research findings and the omission of interactive factors (e.g., gender, leisure participation, and time since spousal loss) as

influential variables within previous research studies, I investigated how gender may affect participation in leisure activities and how such participation may, in turn, affect coping with the loss of a spouse and overall life satisfaction.

Janke, Nimrod, and Kleiber (2008) investigated gender and leisure participation in widowed older adults, suggesting that gender and leisure participation is a protective factor in widowhood; however their study sample was limited to three longitudinal waves, or specific points in time when data were collected, and did not incorporate time since spousal loss as a predictive factor. The researchers associated with the ACL dataset collected data at five different times: wave one in 1986, wave two in 1989, wave three in 1994, wave four in 2002, and wave five in 2011/2012 (ACL, n.d.). My study included time since spousal loss as a variable to expand upon the current literature regarding how widowed older adults perceive their life satisfaction as the time progresses after the onset of widowhood while participating in various physical leisure activities. In my study, I included the latest wave (wave five) of the ACL data collected in 2012 allowing for a current sample and therefore hopefully relevant and significant results.

Understanding the relationship between the time since spousal loss and life satisfaction change while considering leisure participation change and gender influences in widowed older adults can inform the clinical practices of practitioners who work with this population. Also, knowledge about the complex relationship between the time since spousal loss and life satisfaction in relation to leisure participation change and gender influences may have implications for proactive, psychoeducational work with older adults proactively in efforts to better prepare for such adverse life events.

Gender is not only one of the strongest predictors of life expectancy and of quality of widowhood (Aldwin & Gilmer, 2013), but is also an important factor influencing the relationship between reaction to the loss of a spouse and continued or increased participation in physical leisure activities. It was my hope that results of my research would offer implications for counseling practice by clarifying the relationship between the time since spousal loss and life satisfaction change when considering participation in physical leisure activities. I also hoped to provide more insight into how gender influences the relationship between the time since spousal loss and physical leisure participation. Counselor educators could help prepare future counselors to work effectively work with an older adult population within the context of continuity theory and adjustment to many losses while considering older adults gains and strengths.

Further, understanding the relationship between the time since spousal loss and life satisfaction in relation to leisure participation and gender influences in widowed older adults would help to educate the population on protective factors. Lastly, understanding such relationships would be helpful in advocating for social change in policies and government support for mental health services and Medicare reimbursement for such preventive and psychoeducational services.

Organization of the Dissertation

This dissertation was organized into five chapters. The theoretical framework for this study, continuity theory and selective optimization and compensation theory (SOC), were briefly discussed in chapter one and three and in greater detail in chapter two. The first chapter provided an overview for the proposed study, a statement of the problem that

was explored, the purpose of the study, a brief introduction to the research questions and hypotheses, the significance of the study, and definitions of key constructs and terms. The second chapter provides a comprehensive literature review supporting the current study. In chapter three, I include the methodology, variables, description of the data set being used, and the methodology that were be used to interpret the data. Chapter four describes the details of the statistical studied performed with the data and their results. Chapter five includes a discussion of the study results including implications, limitations, suggestions for further research, and future directions.

Definition of Terms

Adaptation

Adaptation refers to an ability to alter in the structure or function, to modify in efforts to fit a changed environment, or to survive in a particular life circumstance (Headey & Wearing, 1989).

Bereavement

Bereavement is defined as the loss of a loved one by death (Christ, Bonanno, Malkinson, & Rubin, 2003).

Gender

Gender, which is often considered as a synonym for biological sex, is the public and usually legally recognized lived role as a boy or girl or as a man or woman (American Psychiatric Association, 2014). For purposes of this study, the researcher decided to utilize the terms female and male to denote the two genders.

Grieving

Grieving refers to a process in which a person feels grief and great sorrow due to loss (Christ et al., 2003).

Leisure Participation

Leisure participation involves voluntarily engagement in activities other than work and other social and familial responsibilities (Pillemer, Moen, Wethington, & Glasgow, 2000). Leisure participation will be viewed in three different dimensions: formal social participation, informal social participation, and physical activities. For purposes of this study, non-physical leisure participation comprises both informal and formal social participation.

Formal Social Participation. Formal social participation might take the form of integration into organizations or participating in organized religious activities (e.g., volunteering in schools, nursing homes, attending religious activities) (Janke et al., 2008).

Informal Social Participation. Informal social participation includes activities in which people informally and recreationally spend time with families, friends, and neighbors (e.g., talking with family, friends, attending gatherings or celebrations) (Janke et al., 2008).

Physical Activity Participation. Physical activity participation includes participation in sports, exercise, and any other physical activities (e.g., gardening, walking, jogging) (Janke et al., 2008).

Life Satisfaction

Life satisfaction refers to a “global assessment of a person’s quality of life according to his or her chosen criteria” (Shin & Johnson, 1978, p. 478). Using a self-evaluative process, life satisfaction involves comparing the present with the past life, and the present with the future (Diener & Seligman, 2004).

Older Adulthood

Older adulthood refers to a period of time in human life span development approximately after age of 65 (Fields & Casper, 2000).

Optimal Aging

Optimal aging is a multidimensional construct because it involves avoiding accelerating agents that might contribute to premature illness and disabilities. It also involves developing protective factors that decelerate disease and aging processes in order to maintain good physical, mental, and cognitive health (Aldwin & Gilmer, 2013).

Successful Aging

Successful aging is defined as the ability to maintain low risk of disease, high physical and mental functioning, and active engagement with life (Rowe & Kahn, 1998).

Well-being

Well-being is a multidimensional construct, which can be divided into environmental, physical, social, and psychological well-being domains (Aldwin & Gilmer, 2013). Because this research focuses on life satisfaction of older adults and psychological aspects of human beings, only psychological well-being is defined here.

Psychological aspects of well-being encompass mental and emotional health (e.g., cognition, emotions).

Widowhood

Widowhood refers to a state of being a widow or widower, and a period of time in which one remains widowed after losing a spouse to death.

Chapter Two

Literature Review

Life satisfaction is considered one of the most fundamental of all human goals (Diener & Seligman, 2004) and an essential part of successful aging (e.g., Cavan et al., 1949; Collette, 1984; Neugarten et al., 1961; Stevens-Ratchford, 2011) Presently, approximately 13% of the total population in the United States (U.S.) comprises of adults who are 65 and older, amounting to about 40.3 million people. It is projected that by 2040, this number will double, and that older adults will make up 20% of the total population (Administration on Aging, 2010a).

Because the older adult population is continuously growing, it is not surprising that successful aging is one of the areas of human development that has become the focus of many scientific disciplines. Physicians, gerontologists, counselors, psychologists, biologists, and sociologists have been studying the complexity of the aging process, along with the intricate life events that older adults experience (Aldwin & Gilmer, 2013). Because the U.S. population is rapidly aging, it is important to understand adult development in later years and what might impact later adult life satisfaction. Moreover, it is imperative to understand the relationship of factors that may impact successful adjustment to serious life events, such the death of a spouse. Understanding relational factors will benefit physicians, counselors, and other professionals working with older adults to recognize and more effectively address the needs of members of the older adult population.

Given that older adulthood is a period of time when people experience many gains and losses that are occurring within their individual's social context, aging looks different for various older adults. Overall development in older adulthood is comprised of processes that are modifiable and influenced by a variety of biological factors such as oxidative processes in the cells and nutritional status as well as psychosocial factors (e.g., stress, personality, and surrounding environment) (Aldwin & Gilmer, 2013). Each of these factors can act as either risk factors that accelerate aging, or as resilience factors that decelerate aging. The biological science of aging is concerned with losses in capacity and adaptability, while psychosocial science focuses on gains related to improved emotional stability and self-regulation (Aldwin, Yancura, & Boeninger, 2010). This dissertation research focused on life satisfaction in older adults, a population in the United States that is steadily increasing in number.

Older adults have advanced their knowledge and skills, and their experience can be rich. At the same time, older adults may be dealing with physical, cognitive, and social changes that can, at times, adversely affect their daily functioning (Broderick & Blewit, 2011). Some of the social changes that are considered challenging for older adults include those related to work disengagement and spousal loss (Aldwin & Gilmer, 2013). These changes require transition and adaptation and many times such transitions as associated with experiences of isolation, anxiety, depression, and overall lack of life satisfaction (Hagedoorn et al., 2006; Wilcox et al., 2003).

Life satisfaction is considered to be an important part of optimal and successful aging (e.g., Cavan et al., 1949; Collette, 1984; Neugarten et al., 1961; Stevens-

Ratchoford, 2011) and an indicator of well-being that is measured on a continuum ranging from negative to positive. It may be challenging for older adults to feel satisfied in their lives if they are faced with significant challenges, such as transition to retirement, facing chronic illness, declining health, and losing family members. Grieving and bereavement typically associated with the loss of a spouse or partner through death has been associated with affecting older adults' well-being and, therefore, with life satisfaction (Hagedoorn et al., 2006; Wilcox et al., 2003).

Regardless of the conditions surrounding the death of a spouse, events such as becoming widowed and the accompanying changes in one's life circumstances require some level of adaptation. The process of adaptation might be associated with long-lasting changes in life satisfaction because social bonds formed and maintained for years between the spouses was suddenly disconnected (Larsen, 2000; Williams & Thompson, 1993). Adaptation researchers have shown that adaptation is quick, complete, and inevitable, and that eventually, at some point after a disruptive life event, people's emotional state and well-being returns to the pre-disruptive life event set point (Headey & Wearing, 1989; Larsen, 2000; Williams & Thompson, 1993). People may react strongly to various life events, but after some time, the majority of individuals eventually return to their initial levels of life satisfaction (Lucas et al., 2003). At the same time, adaptation time to a spousal loss varies in older adults, with the possibility of adaptation lasting several years (Lucas et al., 2003; van Baarsen & van Groenou, 2001). Widows tend to have a greater decline in physical health, mental health and social functioning (Chen et al., 1999; Wilcox et al., 2003) as compared to non-widowed older adults.

Moreover, widowed older adults may never return to their pre-loss levels of life satisfaction.

Adaptation to widowhood depends on a number of factors, such as gender, social support, involvement in leisure activities, and time since spousal loss. This research explored how each of these factors influence life satisfaction after spousal loss also with the goal of providing more insight into the “how” of aging successfully. Specifically, if life satisfaction was considered an indicator of successful aging.

Theoretical Framework

Aldwin and Gilmer (2013) pointed out that the environment, genetics, social connections, socioeconomic status, chance, and choice impact the aging process. The authors (Aldwin & Gilmer, 2013) have further argued that while people have no control over the inevitability of aging, they might have some control over *how* they age, including options and freedom of choice when faced with gains and losses in older adulthood. During serious life transitions such as spousal loss, widows’ selection of options might influence the way they adapt to such life events. Amongst contemporary psychosocial theories of aging that view development as series of transitions and choices influenced by gender, social context, and historical periods include continuity theory and selective optimization and compensation theory of aging (SOC).

Continuity Theory

Atchley (1989) proposed the continuity theory of aging, and stated that continuity or lack of continuity influences perception of oneself as an older adult, with continuity being a primary adaptive strategy for dealing with transitions associated with normal

aging (Atchley, 1989). According to Atchley (1989), people wish to maintain participation in the same activities they had enjoyed prior to aging and during their life course. According to Atchley (1989), older adults try to preserve and maintain their internal (e.g., personality, ideas, and beliefs) and external worlds (e.g., relationships and social roles), and psychological and social patterns. Atchley (1989) further contended that people develop stable activity patterns that help them preserve patterns developed earlier in their lives (Atchley, 1989).

Continuity may also serve as an adaptive coping strategy when facing negative life events in older age. Familiar leisure activities, as well as continued engagement in significant relationships, have great importance in restoring meaning and direction after negative life events (Kleiber et al., 2002). Most researchers who have investigated continuity, change, and adaptation in later life have supported the importance of continuity as a main characteristic of healthy aging (Hasselkus, 2002; Nimrod, 2008; Stevens-Ratchford, 2011; Vaillant, 2002).

Agahi, Ahacic, and Parker (2006) found in their longitudinal study of 495 older adults, aged 77 to 99 (mean age of 83.5 years), that leisure participation in old age was often a continuation of participation in activities in earlier life, despite the fact that participation in activities declined due to physical, cognitive, and social limitations. Minhat, Rahman, and Khadijah (2013) also examined current and former leisure participation patterns in 268 individuals, ranging from 60 to 73 years old. Khadijah (2013) found that the current leisure participation of older adults resembled general leisure involvement when the participants were younger. Nimrod (2008) examined the

association between pre- and post-retirement activities based on nationally collected data. In her sample of 430 retirees, 72% of participants continued to be involved in leisure participation post-retirement, despite the frequency of participation in activities declining with age (Nimrod, 2008). Thus, it appears that older adults continue to engage in the same activities they enjoyed earlier in life, or return to high interest activities in which they had engaged in the past.

Selective Optimization and Compensation Theory of Aging

An additional conceptual framework on which this study is based is Baltes and Baltes' (1990) selective optimization and compensation theory of aging (SOC). The SOC theory stems from a goal-oriented approach to development and can be viewed as an extension of continuity theory because it not only describes the need for continuity and adaptation, but also explains how this adaptation in continuity may be achieved (i.e., selection, compensation). Authors of the SOC theory (Baltes & Baltes, 1990) of aging stressed the balance between gain and loss in the aging process. Baltes (1987) described aging as a process, rather than as a series of stages. With limited or reduced resources, Baltes (1987) contended that older adults need to select goals or activities they wish to pursue and optimize their performance by applying resources to those particular goals, while compensating for deficiencies that could interfere with goal achieving (e.g., life satisfaction after spousal loss).

According to Baltes and Baltes (1990), adaptation to life changes can be accomplished through several means: (a) being selective when choosing activities based on personal abilities and meaning; (b) optimizing one's abilities by working harder and

focusing resources on desired goals; and (c) compensating for loss of meaningful activities by adapting how desired goals are achieved in times of struggles and limitations (Baltes & Baltes, 1990; Baltes & Carstensen, 1996). Hutchinson and Nimrod (2012) investigated leisure activities in older adults living with chronic conditions and strategies used to manage their chronic conditions and live well with them. They conducted a qualitative study using semi-structured in-person interviews (Hutchinson & Nimrod, 2012). Using within and cross-case thematic analyses, the researchers analyzed data collected from 18 community-dwelling older adults with a variety of chronic conditions (nine females, nine males, aged 58-87) (Hutchinson & Nimrod, 2012).

Hutchinson and Nimrod (2012) identified four themes that emerged from their analyses, which were consistent with SOC theory: drawing on existing resources, setting leisure-based goals, using strategies to get more out of life, and living a meaningful life. They reported that older adults gave up some activities, modified others, and continued with those that were not affected by chronic illness (e.g., watching TV or talking with friends). Hutchinson and Nimrod (2012) concluded that although older adults' frequency of participation decreased in many activities while managing their health problems and staying leisure-goal oriented, they continued to want to experience a purposeful and meaningful life. As a result, the older adults developed new activities (e.g., volunteering) in order to give back to the community.

Researchers (Fry, 2001; Janke et al. 2008; Nimrod et al., 2008), have presented data, which support that older adults tend to be selective about the types of activities in which they want to participate or remain engaged; that they participate more in activities

that provide optimism, meaning, and purpose in life including, but not limited to spiritual and religious activities. Older adults may choose activities different from those in which they had participated in the past or continue in the same activities, but decrease their level of engagement (Janke et al., 2008; Nimrod, 2008; Nimrod et al., 2009). Authors of the SOC theory have suggested that responding to limiting factors that accompany aging is adaptive, healthy, and normative (Baltes & Baltes, 1990).

As previously mentioned, there have been mixed results in the published literature exploring adaptation to spousal loss and its effects on life satisfaction. Some researchers (e.g., Lucas et al., 2003; van Baarsen & van Groenou, 2001) found that widowed older adults never return to pre-loss life satisfaction but, instead establish a new baseline for life satisfaction after the loss of a spouse. On the other hand, other researchers (e.g., Bonanno et al., 2002) reported that widowed older adults might actually be happier after a spousal loss than before such a loss. Despite the varied research outcomes for post-lost life satisfaction, adjustment to such life events is evident. For example, based on the theory of SOC (Baltes & Baltes, 1990), although widowed older adults might have shared the experience of losing a spouse, personal characteristics and life circumstances may vary. Widowed older adults may, therefore, adjust to such a loss differently by *selecting* from a variety of coping mechanisms available, *optimizing* their abilities by working harder and independently, and *compensating* for the loss in myriad ways in order to form a new life (Baltes & Baltes, 1990).

In summary, Baltes and Baltes (1990) contended that there will be variations in how older adults adapt to the aging process and the losses they experience as they age

due to unique personal characteristics and life circumstances. Further, adaptation might happen through being selective between activities and situations, and through optimizing and compensating for various losses in life.

Life Satisfaction in Older Adulthood

Life satisfaction, a primary factor of subjective well-being (Diener et al., 1999; Ranzijn & Luszcz, 2000), is considered to be an important part of optimal and successful aging (Cavan et al., 1949; Collette, 1984; Neugarten et al., 1961; Lomann, 1980; Stevens-Ratchford, 2005, 2008). Life satisfaction is an overall assessment of feelings about life fulfillment and life contentment, and includes evaluative attitudes about people at a particular time in their lives (Stevens-Ratchford, 2011). Campbell (1981) defined satisfaction as “the perceived discrepancy between aspiration and achievement, ranging from the perception of fulfillment to perception of deprivation” (p.4), whereas Streib and Schnieder (1971) viewed life satisfaction as a function of discrepancy between internalized expectation and perceived realities.

Older adults typically assess life satisfaction through a subjective comparison of the past relative to the present or the future (Ryff, 1991; Shmotkin & Hadari, 1996). Such a comparison indicates that current evaluation of life is influenced by past experience (Bishop, Martin, & Poon, 2006). In addition to comparing past to present experiences, their knowledge of age-related changes plays a role in older adults’ perception and understanding of their life satisfaction; therefore, it is crucial for individuals to understand how individual and social factors affect level of life satisfaction.

Life Satisfaction from a Developmental Perspective

Life satisfaction is typically a self-evaluative process wherein the present is compared with the past life and with one's anticipated future life (Ryff, 1991; Shmotkin & Hadari, 1996). Such a subjective evaluative perception is done throughout life and may vary across the life span. Life satisfaction across the life span has been found to be remarkably stable during early and middle adulthood (Diener & Suh, 1998; Mroczek & Spiro, 2005) yet tends to decline in older adulthood (Gerstorf et al., 2008). Such a pattern may resemble a traditional life span development with an increase in skills, knowledge, and experience throughout childhood, adolescence, and young adulthood, followed by stability in middle adulthood, and a decrease in older adulthood (Gomez, Grob, & Orth, 2013). However, present life span developmental theorists (e.g., those ascribing to SOC theory and socio-emotional theory) challenge this simple view of human development, and propose human development as multidimensional and multidirectional, with dynamic processes and intertwined gains and losses (Baltes, 1987).

Individuals possess adaptive capacity (i.e., dynamic interplay between growth or gains and decline or losses) as a feature of any developmental progression at any given time during the life span. A shift in the allocation of resources is observed from an orientation on growth in young adulthood, to maintenance in middle adulthood, and regulation of loss in older adulthood (Baltes, 1987). People tend to pay closer attention to time left in their older adulthood lives, adjusting their current perceptions of life and adapting to more relational and emotional-based life goals (Carstensen, 1995). Due to ongoing adaptation to new demands (e.g., gains and losses) of human development across

the life span, individuals may report various perceptions of past, present, and future life satisfaction.

Gomez and colleagues (2013) conducted a cross-sectional study of past, present, and future life satisfaction perceptions across the entire life span. Their sample consisted of 766 adults: 256 young adults, 244 middle-age adults, and 266 older adults (Gomez et al., 2013). Participants reported their perceptions of life satisfaction across nine decades (e.g., age 5, 15, 25,....85) (Gomez et al., (2013). Life satisfaction perception across the life span in each of the three age groups followed a similar trajectory: high level of life satisfaction in childhood, decline in reported life satisfaction during adolescence, improved satisfaction during the middle adulthood, and steady decline of life satisfaction for the future (Gomez et al., (2013). On average participants in all three groups were the most satisfied with their current life (Gomez et al., (2013). Gomez et al. (2013) concluded that individuals have an adaptive capacity to perceive their present lives as being the best possible, regardless of age and personality.

Humans' adaptive capacity needs to be considered when conceptualizing life-span development, and many early theories of successful aging did not take adaptive capacity into account. In contrast, more recent and contemporary theories of aging do take into consideration an individual's adaptive nature within the social and cultural context of human development and aging.

Theories of Successful/Optimal Aging

Successful aging theorists (Bergstrom & Holmes, 2000) have attempted to explain how individuals transition into and adapt to changes associated with aging, and to predict

whether older adults' adaptation will result in successful aging. Researchers from many disciplines have looked at aging through narrow lenses, not taking into consideration all possible aspects of aging. For example, the biological science of aging is concerned primarily with losses in capacity and adaptability, while the psychosocial sciences focus primarily on gains related to improved emotional stability and self-regulation (Aldwin, Yancura, & Boeninger, 2010).

Psychosocial theories are comprised of classic aging theories that include both ontogenetic and sociogenic models (Aldwin & Gilmer, 2013; Rossi, 1980). Those ascribing to ontogenetic models have posited development as internally and biologically based, while sociogenic models are based on the premise of adulthood changes are the result of social forces and history (Aldwin & Gilmer, 2013; Rossi, 1980).

The authors of sociogenic models (Cummings & Henry, 1961) gave rise to aging theories such as disengagement theory and proposed that older individuals withdraw from society. The sociogenic models also served as a basis for activity theory (Havighurst, 1963), which is based on the concept that being a more active, older adult leads to increased experience of life satisfaction. Langer and colleagues (1990) proposed self-directed development, stipulating that adult development is something that people do, not something that occurs. For example, people chose to retire and chose to engage in certain activities. Langer (1997) suggested increased mindfulness as a crucial role in adult development.

Resilience theories in adult development and aging have focused on experiences individuals gain throughout life via complex transaction amongst sociocultural,

contextual, and individual resources, all of which can influence and be influenced by an individual's coping mechanisms during stressful life events (Aldwin & Igarashi, 2012; Charles, 2010). Adherents to postmodern theories of successful aging (e.g., continuity theory and SOC theory) have attempted to include contextual and situational factors that influence aging, and have suggested that there is no universal theory of aging, but rather that aging is uniquely defined (Topaz, Troutman-Jordan, & MacKenzie, 2014).

Many universal theories of successful aging (e.g., disengagement theory and activity theory) have been challenged and deconstructed based on critiques of having rigid boundaries. One contemporary theory of successful aging that is widely recognized yet critiqued is Rowe and Kahn's (1998) theory, which is comprised of physical, cognitive, and social components. In this theory, the authors defined successful aging as the ability to maintain low risk of disease, high physical and mental functioning, and active engagement with life (Rowe & Kahn, 1998). However, this theory has been criticized as being overly exclusive because of the expectations placed on people to possess high physical functioning and an absence of disease, and for failing to consider issues of spirituality as well as ethnic and cultural backgrounds (Aldwin & Gilmer, 2013).

Based on Rowe and Kahn's model, Vaillant's (2002) model of aging included three additional criteria for optimal aging in regards to social engagement and productive activity: 1) participating in social activities, 2) having social support, and 3) having life satisfaction in many domains. Vaillant (2002) attempted to examine predictive factors of successful aging based on analyses of multiple, long-term longitudinal studies. Vaillant

(2002) concluded ancestral longevity predicted mortality only before age 60 but not thereafter, meaning that once older life is achieved, individual health behavior habits are more important than genetics. Several predictors of successful aging identified by Vaillant (2002) included no heavy smoking or drinking before age 50, no obesity, moderate exercise, and stable relationships, including marriage. As some critics have argued (Aldwin & Gilmer, 2013), Vaillant's (2002) model of aging is an incomplete one, however, this model provides a contemporary explanation of the interplay of individual and sociocultural factors that may influence the aging process.

Recently, the term optimal aging has been preferred over the term successful aging because not only does the former recognize good physical functioning, cognitive abilities, and mental health, it also allows for recognition of the development of illnesses and limitations (Minkler & Fadem, 2002), and, therefore, provides a myriad of ways of aging well. Moreover, the term optimal aging avoids the connotation of competition that the word *success* may bring (Aldwin & Gilmer, 2013). Aldwin and Gilmer (2013) argued optimal aging as a multidimensional construct due to their avoidance of accelerating agents that might contribute to premature illness and disabilities as well as the inclusion of developing protective factors that decelerate disease and aging processes in order to maintain good physical, mental, and cognitive health.

Biologists, gerontologists, psychologists, and sociologists have been working on developing a common language to bridge the interdisciplinary gap in terms of factors that can either accelerate, or decelerate, the aging process and to provide information on how people can age successfully (Aldwin & Gilmer, 2013). It is imperative to remember that

one's definition of successful aging may be culturally based; what is considered successful aging in one culture might not be considered to be so in another (Torres, 1999). For example, older Americans view successful aging as being independent and self-sufficient, while older Hong Kong Chinese individuals view successful aging as dependence on family that would care for them (Torres, 1999). As a result, Torres (1999) recommended a unique theory of aging that considers one's own conceptualization of successful aging that takes into account political, economic, and religious systems that influence societal values. Further, since success might be considered a cultural artifact, individuals from some cultures may not conceptualize aging in terms of success or lack of success (Torres, 1999). For the purposes of this study, I focused on older Americans who inhabit a culture that values independence and self-sufficiency, and views success to be an important part of aging (Aldwin & Gilmer, 2013).

Well-being and Successful/Optimal Aging

Well-being is a multidimensional construct, which can be divided into an environmental, physical, social, and psychological well-being domains (Aldwin & Gilmer, 2013). Environmental aspects include home and community; social domains include social support, interpersonal relationships, and participation in social activities; the physical aspect refers to physical health (e.g., mobility, illness); and psychological aspects of well-being encompass mental and emotional health (e.g., cognition, emotions) (Aldwin & Gilmer, 2013). Some authors (e.g., Aldwin & Gilmer, 2013; Franklin & Tate, 2009; Rowe & Kahn, 1999) have put forth that well-being is integrally related to successful aging, with continued overall well-being and health being factors that serve as

the foundation for high functioning and ongoing engagement with life and aging well. Self-rated successful aging has also been significantly associated with participants' sense of well-being (Strawbridge, Wallhagen, & Cohen, 2002).

Strawbridge and colleagues (2002) examined successful aging and well-being in a sample of 867 older adults and concluded that participants' perception of successful aging was highly attributed to their psychological (e.g., mental, emotional) well-being and participation in leisure activities. Despite the fact that nearly half of the participants did not meet the criteria for Rowe and Kahn's (1999) criteria for successful aging, participants in the Strawbridge et al. (2002) considered themselves to be successful. Even though participants were dealing with adverse changes in physical health and ability, they still had positive feelings about their mental and emotional stability and continued growth, resulting in feeling satisfied with life (Strawbridge et al., 2002). Strawbridge and colleagues (2002) concluded that older adults assess their own successful aging in terms of their overall well-being and life satisfaction.

It is clear that the presence or absence of adverse physical or other life events may not necessarily decrease life satisfaction. As mentioned above, it might be health habits (e.g., mental, emotional, behavioral) that influence individuals' perceptions of well-being and life satisfaction and, therefore, of successful aging. Some of the most frequently discussed predictors of life satisfaction in recent literature include, but are not limited to, marital status, gender, social support, and engagement in activity (Aldwin & Gilmer, 2013). I will address several of these aforementioned predictors in the next section, as they are crucial variables for my study.

Marriage and Widowhood in Older Adults

Marriage appears to provide significant health benefits, while divorce appears to provide great difficulties. When it comes to widowhood, researchers have provided mixed results regarding the effects of widowhood on life satisfaction (Aldwin & Gilmore, 2013). People tend to spend the majority of their lives with significant others, with only 4% of older women and 5% of older men in the U.S. identified as either single or never married (AOA, 2010a). Gains and losses are part of normal human development across the life span, but losing a loved one is considered to be a significant loss that can adversely affect the surviving spouse (Holmes-Rahe, 1967).

Research on Marriage and Widowhood

Marriage. Married people tend to live longer in comparison to those never-married, widowed, or divorced, with men seemingly benefiting from marriage more than women (He, Sengupta, Velkoff, & DeBarros, 2005). In addition, according to Harvard Men's Watch (2010), married people, when compared to others, are healthier overall and have higher income, with higher socioeconomic status (SES) serving as a protective health factor. Marriage may also serve as a stress buffer (Aldwin & Gilmer, 2013). Thus, disruption in marital status (e.g., divorce or death of a spouse) may have adverse effects on health, well-being, and life satisfaction. Divorce is rather rare in late life, with only 10% of older adults reporting being divorced in 2008 (AOA, 2010b). Since widowhood and the time since spousal loss are chosen variables for this research, possible risks associated with loss of a spouse are described below.

Widowhood. Approximately 13 million people in the United States are widowed, and more than 10 million of these individuals are older adults, defined as being 65 years old or older (Fields & Casper, 2000). Since the number of older adults is continuously on the rise, the number of widowed older adults is increasing as well due to death of a spouse being a common occurrence in later life, especially for women. Loss of a spouse or significant other is an example of a major disruptive life event; such changes in social support and marital/partner status are important in the social life of an adult.

Holmes and Rahe (1967) noted widowhood as being one of the two most stressful life events in adulthood. Similarly, Hardy, Concato, and Gill (2002) reported that amongst 603 participants aged 70 years and older, 42% identified the death of a spouse or a family member as a stressful life event. Paula Couto, Koller, and Novo's (2011) studied stressful life events and psychological well-being as reported by 111 participants ranging from 56 to 85 years. All 111 participants reported divorce/marital separation and death of a spouse or a family member as the most stressful event.

Widowhood tends to put individuals at a greater risk for declining health (Johnson, Backlund, Sorlie, & Loveless, 2000; Williams, 2004), depression (Lee & DeMaris, 2007; Umberson, Wortman, & Kessler, 1992), despair and distress (Onrust & Cuijpers, 2006), alcohol abuse (Harwood, 2005), higher rates for institutionalization (Elwert & Christakis, 2008), and decreased income (AARP, 2012; Gass, 1989), especially for women as their financial security might have been connected to having a spouse. Widowhood may lead to decreased social participation because of isolating factors such as depression, or because a deceased spouse may have facilitated and also

engaged in social activities. Widowed older adults seem to suffer from mental health problems, especially men. Aldwin and Gilmer (2013) suggested that widowers live with depression, especially those who have been widowed for an extended period of time. Lee and DeMaris (2007) found that on-set of depression for men occurs before widowhood, knowing that their spouse is seriously ill.

Gender. In addition to marital status, gender seems to be one of the strongest predictors of life expectancy with women living approximately 5 years longer than men (Aldwin & Gilmer, 2013; AOA, 2010b). As of 2008, there were approximately 10 million widowed older adults, with 12% being men and 37% being women (AOA, 2010a). In 2008, among adults 65 and older there were 72 men to every 100 women. (AOA, 2010a). This number changes by the age of 85 and older, averaging 49 men to every 100 women (AOA, 2010b). This longevity rate for females has profound implications for marital status, health, and leisure involvement and, therefore, life satisfaction.

Men tend to become widowed at a later age than women and stay widowed for a shorter period of time as they usually remarry (Aldwin & Gilmer, 2013). Women become widowed at an earlier age and stay widowed for a longer period of time because they are less likely to remarry (Aldwin & Gilmer, 2013). Harvard Men's Health Watch (2010) reported an increase in mortality within the first year of widowhood with men twice as likely to die as women within the first 6 to 12 months of the death of their spouse. Caserta (2002) suggested that men benefit from the social support of a wife and that such social support might serve as a protective factor from life stress. Harvard Men's Health

(2010) noted that in one study, the researchers found that 66% of men derived their closest social relationships from their wives and from having them as a primary social support. After losing such social support and a significant protective factor, men may be more vulnerable to death shortly after losing a spouse. Thus, in times of loss men might suffer more acutely than women who might have a greater extensive social support network.

Time Since Spousal Loss

Bereavement, defined as the loss of a loved one by death (Christ et al., 2003), and grieving typically related to the loss of a spouse have been negatively associated with older adults' well-being, and therefore their life satisfaction (Hagedoorn et al., 2006; Wilcox et al., 2003). Widows tend to have a greater decline in physical health, mental health, and social functioning when compared to non-widowed older adults (Chen et al., 1993; Wilcox et al., 2006). Regardless of the conditions surrounding the death of a spouse, adjusting to widowhood and accompanying life changes requires time and a degree of adaptation.

Researchers (Lucas et al., 2003; van Baarsen & van Groenou, 2001) have found that adaptation time to spousal loss varies in older adults, with the entire process taking several years. Hagedoorn et al. (2006) reported that participants widowed less than two years and those widowed between 2-8 years reported more stress and dissatisfaction with life than married or single adults. Similarly, Lucas and colleagues (2003) conducted a study based on longitudinally collected data. Their sample included 334 participants who were married at the time they began the survey and then became widowed and did not

remarry (Lucas et al., 2003). Lucas and colleagues (2003) focused on adaptation to spousal loss, with life satisfaction being measured at three different times: 1) pre-widowhood (referred to as baseline life satisfaction); 2) at the time of spousal loss (referred to as the reaction phase); and 3) post-widowhood (referred to as the adaptation phase). Looking at all marital transactions, the authors found support for a general process of adaptation, concluding that people's life satisfaction level changes during the specific life event that requires transition, and then returns to pre-event levels (Lucas et al., 2003).

Considering only transition to widowhood, adaptation appears to occur over a long period of time and might not result in a return to pre-event life satisfaction levels. Lucas et al. (2003) found that widowed adults reported significantly lower levels of life satisfaction, as compared with their own baseline levels, during the reaction and adaptation phases. A linear change model indicated widowed adults reported a .935 point drop in satisfaction during the 1st year after losing a spouse, which then increased at a linear rate of .101 per year (Lucas et al., 2003). Further, widows were significantly less satisfied during the reactivity phase when compared to the adaptation phase and came closest to their pre-loss levels of life satisfaction only by the eighth year of widowhood. Lucas and colleagues (2003) concluded that even though older adults adapt to spousal loss, they do not return to their pre-loss levels of life satisfaction. Based on the findings that many widowed participants did not report life satisfaction levels equal to or greater than their pre-loss levels of satisfaction, one can argue that widowed adults form a new baseline for life satisfaction after the death of a spouse.

There is also research to indicate that life satisfaction levels of some widowed adults might improve after the death of a spouse. Bonanno and colleagues (2002) investigated resilience to loss and chronic grief in older adults based on a sample of 205 participants (180 females and 25 males) whose average age was 72. The authors identified five patterns: 1) common grief, 2) chronic grief, 3) chronic depression, 4) improvement during bereavement, and 5) resilience (Bonanno et al., 2002). Group differences in depression were measured pre-loss, at 6-months, and 18-months post-loss and grief symptoms were measured at 6 and 18 months post-loss. Bonanno et al. (2002) found that out of these five bereavement patterns 45.9% of participants belonged to a resilient group pattern with almost half of the widowed adults reporting low depression scores at pre-loss and reporting even lower depressive scores after spousal loss. Moreover, widowed adults experienced the lowest number of grief symptoms at 6-month post-loss, and an even lower number of grief symptoms at 18-months post-loss (Bonanno et al., 2002), thus suggesting improved quality of life. Based on these findings, there appears to be variability in life satisfaction after spousal loss, and one of the many factors that have been associated to date with this variability is participation in leisure activities.

Leisure Participation in Older Adults

Leisure participation in earlier adulthood has been established as a predictor of late-life participation (Agahi et al., 2006; Stevends-Ratchford, 2011). Due to the continuity tendency individuals tend to carry on involvement in activities in which they were involved previously (Atchley, 1989). Ongoing involvement in leisure activities is associated with improved well-being and higher levels of life satisfaction in older adults

(Hass, 1999; Krause, 2004; Rowe & Kahn, 1999). Older adults tend to participate in the same, or similar activities established in earlier life, if with decreased frequency as they negotiate gains and losses of late adulthood (Janke et al., 2008) while becoming increasingly selective about activities that are more personally meaningful (Baltes, 1987).

Research Related to Development of Leisure Activities and their Importance

Vaillant (2002) and Hasselkus (2002) suggested that a focal theme of aging well, with a high level of life satisfaction, is engagement in meaningful activity. Development of meaningful activity involves effort and concentration, resulting in skill and knowledge development over time (Stevens-Ratchford, 2011). Meaningful activities provide social connections, create social networks, provide wanted expression and, finally, offer ongoing learning and growth (Valliant, 2002). Such acquisition of skills can provide great benefit in older adulthood, with the focus being on selecting and compensating for losses associated with later life development. Engagement in meaningful social activities contribute to the overall well-being and higher levels of life satisfaction and, therefore, to successful aging.

Types of Leisure Activities

Leisure activities can be viewed as having three different dimensions: 1) formal social participation (e.g., participation in organizations or religious activities); 2) informal social activities (e.g., socializing with friends and family); and, 3) physical activities (e.g., participating in sports or gardening) (Donnelly & Hinterlong, 2009; Janke et al., 2008). The most frequently reported leisure activities for widowed older adults include talking with family and friends, visiting others, gardening, religious activities,

participation in sports, and reading or watching TV (Janke et al. 2008). Researchers (Hao, 2008; Morrow-Howell et al., 2009) have noted that by being active and involved in such activities, widowed older adults may experience decreased feelings of isolation and maintain or improve their general sense of well-being.

Formal Social Participation. Formal social participation might take the form of integration into organizations or participating in religious activities. Widowed older adults who participate in such activities tend to have fewer symptoms of depression, higher self-esteem, and higher life satisfaction compared to widowed older adults who are not involved in such activities (Pillemer et al., 2000). Researchers (Janke et al., 2008; Utz, Carr, Nesse, & Wortman, 2002) have reported an increase in participation in religious activities after spousal loss, with is a slight decline in participation in religious activities after some time has gone by (Balaswamy Richardson, & Price, 2004). Such participation may provide widowed older adults with needed emotional support, new friendships, and a sense of community and belonging (Neill & Kahn, 1999). Researchers (Carter, 2005; Fry, 2001; Richardson, Lund, Caserta, Dudley, & O Bray 2003) have found that during the bereavement period, health concerns (e.g., sleep disturbance, fatigue, and loss of appetite) tend to persist or intensify. However, as Utz and colleagues (2002) have reported, a negative relationship can be seen between participation in formal and informal social activities and depressive symptoms during bereavement period in widowed older adults.

Informal Social Participation. Informal social participation includes activities in which people informally and recreationally spend time with families, friends, and

neighbors. Examples of informal social participation include talking with or visiting friends and family, and attending gatherings or celebrations. Lennartsson and Silverstein (2001) investigated engagement with life, with a focus on social participation and survival advantage in samples of older adults, and concluded that activity involvement is associated with improved functioning and successful aging.

After losing a spouse, older adults may lose their main source of socializing or primary means of getting to socialize with others. Thus, informal socialization may diminish during widowhood if friendships or social contacts had been mainly maintained by the deceased spouse (Balaswamy et al., 2004). Conversely, Guiaux, van Tilburg, and van Groenou (2007) reported that some relationships are actually enhanced during bereavement, including relationships with children and siblings. For example, some researchers have found that among widowed older adults, frequency of contact with friends and relatives and/or contact with a peer who has experienced a similar loss is associated with increased positive affect and enhanced support satisfaction (Silverman, 2004; Stewart, Craig, MacPherson, & Alexander, 2001), as well as increased physical and psychological health (Silverstein & Bengtson, 1994). There is evidence to the contrary, establishing that increased phone contact with family members and friends may not correlate with decreased depressive symptoms or with decreased loneliness in widowed older adults (Heller, Thompson, Trueba, Hogg, & Vlachosweber, 1991). It is evident that changes in informal types of social participation typically happen in the older adult after the loss of a spouse. However, the relationship between these changes as related to widowhood and post-loss life satisfaction is inconclusive.

Physical Activities. In the last twenty years, increasing physical activity amongst older adults has become an international priority (WHO, 2002). In the United States, it is recommended that “every adult should accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week” (Paterson, Jones, & Rice, 2007, p. 3). Physical activity increases longevity, decreases risks of acute and chronic diseases, and helps maintain independence and prevent disability (Singh, 2002). There is an abundance of epidemiological studies that reveal unequivocally that physical activity is associated with decreased risk of morbidity and mortality (Paterson et al., 2007). Being involved and participating in physical activities such as walking, jogging, exercising, and playing sports has also been positively correlated with alleviated bereavement symptoms and maintained or improved functional capacity and independence and, therefore, with overall well-being (Paterson et al., 2007). Thus, physical activities seem to have a positive effect on adjustment to widowhood.

Impact of Gender on Leisure During Widowhood

Participation in leisure activities can provide a positive context for adjustment to negative life circumstances by restoring a sense of well-being and of social connectedness (Kleiber et al., 2002; Ong et al., 2004; Patterson, 1996). According to Naef, Ward, Mahrer-Imhof, and Grande (2013), widowed older adults are concerned with everyday life activities because they are suddenly alone. To manage a new need to be self-dependent and to adjust to their loss and solitary time, older adults use various activities and strategies, including keeping busy and being involved in activities and routines (Harrison, Kahn, Hsu, 2004; Holtslander et al., 2011; Steeves & Kahn, 2005).

Being involved in leisure activities may look different for widowed men and widowed women.

According to some researchers (e.g., Iso-Ahola et al., 1994; Stanley & Freysinger, 1995), gender is not only one of the strongest predictors of life expectancy and of quality of widowhood, but also serves a potential moderating effect on the relationship between reaction to the loss of a spouse and continued or increased participation in leisure activities. Men and women tend to participate in different types of activities across the lifespan (Iso-Ahola et al., 1994; Stanley & Freysinger, 1995). According to Janke et al. (2006), men tend to select more physical and individual activities, whereas women tend to prefer socializing with friends and others and participate more in formal leisure activities when compared to men. Furthermore, older women, when compared with older men, often report more barriers to leisure participation (Holtslander et al., 2011; Rodgers, 2004; Wilson & Supiano, 2011), which adversely impacts their participation in leisure activities. For example, older widowed females might have greater difficulties attending social events as a single person compared to widowed males.

Some authors (Holtslander et al., 2011; Rodgers, 2004; Wilson & Supiano, 2011) have suggested that women in particular have to develop a new identity as widows, including mastering new skills, new roles, and new lives. Conversely, other researchers (Bennett et al., 2005; Stroebe et al., 2001), reported that widowers experience higher levels of depressive symptoms than widows, which might be due to a greater challenge in coping with spousal loss compared to the challenges experienced by widows. Widowers

might not participate in leisure activities as much as widows might because there appears to be a lack of social support and effective coping mechanisms.

Social support can be defined as interactions between immediate and extended family members, friends, caregivers, and significant others (Bishop et al., 2006).

Receiving or providing social support and mechanisms of social support (e.g., provisions of informal and formal support) have been found to influence life satisfaction in older adults (Krause, 1990; Rakowski, Clark, Miller, & Berg, 2003), and losing such support might negatively influence the life satisfaction of a widowed older adult.

There are conflicting research findings regarding the impact of gender on participation in leisure activities. The relationship between gender and participation in leisure activities may, in turn, affect coping with the loss of a spouse. Gender might be a significant determinant of the level of involvement in leisure activities, and participation in leisure activities can also be exacerbated by the spousal loss.

Conclusion

Life satisfaction, a primary factor and indicator of subjective well-being (Diener et al., 1999; Ranzijn & Luszcz, 2000), is considered to be an important part of optimal and successful aging (Cavan et al., 1949; Collette, 1984; Neugarten et al., 1961; Stevens-Ratchoford, 2011). Successful/optimal aging is a multidimensional construct that recognizes not only good physical functioning, cognitive abilities, and mental health, but also acknowledges development of illnesses and limitations (Minkler & Fadem, 2002) which provides myriad ways of aging well. As dynamic interplay between the gains and losses (i.e., adaptation) occur, many factors can influence the way older adults age. Loss

of a spouse is an example of a major disruptive life event that can contribute to depression (Lee & DeMaris, 2007; Umberson et al., 1992), decline in mental and physical health (Onrust & Cuijpers, 2006), and ultimately poor life satisfaction. Transition to widowhood might take some time and many older adults do not return to their pre-loss levels of life satisfaction (Lucas et al., 2003; van Baarsen & van Groenou, 2001). On the other hand, Bonanno et al. (2002) found that some widowed older adults improved their quality of life after spousal loss.

Literature about life satisfaction of widowed older adults seems to be contradictory. For this reason, I investigated the association between the time since spousal loss and life satisfaction in widowed older adults. Moreover, some researchers (Kleiber et al., 2002; Ong et al., 2004; Patterson, 1996) have reported that participation in leisure activities can provide a positive realm for adjustment to negative life circumstances (e.g., loss of a spouse) by restoring a sense of well-being and social connectedness. A goal of my study was to find out if there was an effect of leisure participation on the relationship between the time since spousal loss and life satisfaction.

According to previous research men and women tend to participate in slightly different activities (Janke, et al., 2006). For example, Janke et al., (2006) found that men tend to select more physical and individual activities, whereas women tend to prefer socializing with friends and others and participate in formal leisure activities as compared to men. As a result, I investigated the influence of gender on relationship between the time since spousal loss and participation in leisure activities.

Chapter Three

Introduction

Understanding the relationship of leisure, gender, and time since spousal loss to widowed older adults' life satisfaction has implications not only for counselors, counselor supervisors, and counselor educators, but also for personnel in related fields such as medicine, nursing, and gerontology. There is sufficient evidence to indicate that life satisfaction of widowed older adults is affected by several factors, such as gender, leisure participation, and spousal loss (Chen et al., 1999; Hagedoorn et al., 2006; Wilcox et al., 2003). For example, lack of participation in leisure activities has been consistently correlated with a negative impact on life satisfaction of widowed older adults (Kleiber et al., 2002; Ong et al., 2004). Further, gender can significantly influence the type of activities in which older widowed adults engage (Janke et al., 2006; Rodgers, 2004; Wilson & Supiano, 2011). Relatively limited research, however, has addressed how the time after spousal loss may correlate with changes in someone's participation in leisure activities and, therefore, changes in life satisfaction.

Transition to new life circumstances after a loss of a spouse requires time. The time it takes for widowed older adults to adjust to such loss while maintaining daily routines varies (Bonanno et al., 2002; Lucas et al., 2003) and the life satisfaction of many widowed older adults may change (Hagedoorn et al., 2006; Lucas et al., 2003; van Baarsen & van Groenou, 2001). Other authors (e.g., Hao, 2008; Hasselkus, 2002; Morrow-Howell et al., 2009; Vaillant, 2002) have suggested factors (e.g., support from family and friends; religion; and participation in leisure activity) that can help the

adaptation to spousal loss. There is however, great variability in research findings regarding how these different factors may affect life satisfaction after the death of a spouse. In addition, there is a paucity of literature offering implications for counseling interventions to improve life satisfaction and maintain optimal aging of widowed older adults. The primary goal of my research was to address the gap in current literature by providing clarification of some contradictory findings in the literature about the effects of time since spousal loss, gender, and participation in leisure activities on changes in life satisfaction.

Research Questions and Hypotheses

The research questions which guided this study along with corresponding hypotheses that were tested in this study are presented below.

Research Question One

What is the relationship between life satisfaction change (post-loss versus pre-loss) and the time since spousal loss?

Hypothesis 1. Life satisfaction change (post-loss versus pre-loss) of widowed older adults will improve as the time since spousal loss increases.

Research Question Two

Is there a relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change (post-loss versus pre-loss)?

Hypothesis 2. There will be a positive relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change (post-loss versus pre-loss).

Research Question Three

Is there a relationship between life satisfaction change (post-loss versus pre-loss) and gender?

Hypothesis 3. Life satisfaction change (post-loss versus pre-loss) will be less adverse for females than for males.

Research Question Four

Does the relationship between life satisfaction change (post-loss versus pre-loss) and changes in physical leisure participation differ between females and males?

Hypothesis 4. The relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change will differ between females and males.

Method**Research Design**

This research was an observational study utilizing longitudinally collected data on older adults, which is described in the next section. This study was considered non-experimental because the independent variables were not manipulated by the researcher (Johnson & Christensen, 2012). The strength of an observational study is the use of outcomes in describing current practices. In this case, the results described predictable changes in life satisfaction of widowed older adults since loss of a spouse. This type of study has limitations as well (Remler & Van Ryzin, 2011). The variables in this study are endogenous because the variables influence each other and are influenced by other variables outside of those being measured. To minimize the impact of this endogeneity, several variables that have been established through previous research to impact life

satisfaction of widowed older adults (e.g., age at time of loss, race, education, employment status, socioeconomic status) were included as control variables.

This correlational study included three independent variables (time since spousal loss, change in physical leisure participation, and being female) and one dependent variable (change in life satisfaction). The purpose of the study was to investigate the relationship between times since spousal loss, leisure participation, and life satisfaction change. This study was both descriptive with a correlation research design and predictive in that it describes the relationships between the variables of interest and also serves as a model for predicting change in life satisfaction in widowed older adults based on time since spousal loss, change in physical leisure participation and being female (Johnson & Christensen, 2012).

Dataset

The primary goal of this study was to explore the relationship between change in life satisfaction of widowed older adults and time since spousal loss. To meet this goal, this researcher utilized data from the Americans' Changing Lives (ACL) dataset (ACL, n.d.) collected in 1986, 1989, 1994, 2002, and 2012 and archived for public use with the University Of Michigan's Inter-University Consortium for Political and Social Research (IUCPSR). The ACL database is a unique and significant set of data since it offers longitudinal information on a particular subset of the United States population.

The ACL study began in 1986 (wave one) with a national face-to-face survey of 3,617 adults aged 25 and older in the United States, with adults aged 60 and older over-sampled at twice the rate of the others (House, 2012). The initial response rate was 68%.

Face-to-face re-interviews (wave two) were conducted in 1989 with 83% (n=2,867) of those participants still alive (House, 2012). No changes within the interview process were made between wave one and wave two. Surviving participants (n=2,562) were re-interviewed again face-to-face or by phone (wave three) in 1994 (House, 2013). The next face-to-face or telephone re-interviews took place (wave four) in 2001/02 with n = 1,787 surviving members of the original sample (House, 2012). Finally, the last re-interviews (wave five) were conducted in 2011/2012 with n = 1,427 survivors of the original sample (House, 2012).

Analytic Sample

Participants were recruited using a stratified random sample of all cities within the United States. For the purpose of this dissertation, the analytic sample included older adults who participated in the original study and were interviewed again in either wave four or wave five. All older adults were separated into two groups, widows and non-widows. For the purposes of my study, participants were included in the sample as long as they were at least age 65 because those who are 65 and above are defined as older adults (Fields & Casper, 2000) and widowed during at least one of the two interviews (e.g., wave four or wave five). All those who remarried after widowhood were not selected for this study in order to specifically focus on widowed older adults (not remarried older adults).

Sample Size

In this study, to minimize the chances of rejecting the null hypothesis when it was actually true (Type I error), the level of significance was set to $\alpha = .05$. A Type I error is

the probability of rejecting the null hypothesis when it is false. In examining statistical power for this study, a power level of $1 - \beta = .80$ was used to make an initial determination of the number of participants necessary to detect an effect when one exists (Cohen, 1992; Remler & Van Ryzin, 2011). Using G*Power software it was determined that a sample size of $n = 244$ participants was needed in order to produce a regression model with a statistical power of $1 - \beta = .80$ assuming a medium effect size (coefficient of determination $R^2 = .06$). This assumed that all eight predictor variables (which includes both control variables and independent variables) initially considered in this study were used in the hierarchical regression analyses. In actuality, a smaller number of predictor variables were used in the regression analyses because some of the predictor variables did not have significant relationships with the dependent variable (i.e., life satisfaction change). Because of this the required sample size should have been somewhat lower. For the final three predictors used in this research, the sample size necessary was 175 as in can be seen in Table 1 on the next page. My sample size of 222 exceeded the target sample size of $n = 175$ needed to produce a .80 statistical power level with three predictor variable as determined by G*Power software.

As previously noted, the archival database used was based on a stratified sample. As such, ideally replicate weights should be used when performing statistical analyses with this data. Unfortunately, I was unable to obtain these replicate weights from the publishers of the ACL database or any of the documents on the ACL website (e.g., the codebook). I also reviewed articles of other studies utilizing the ACL database and found that none of these other researchers incorporated replicate weights in their analyses

Table 1

Required Sample Sizes for Multiple Linear Regression

<u>Number of Predictors</u>	<u>Required Sample Size</u>
1	125
2	154
3	175
4	193
5	207
6	220
7	232
8	244

(Janke et al., 2008; Nimrod et al., 2009). As a result, I decided to run statistical analyses without the replicate weights.

Variables

The ACL data were collected by participants responding to face-to-face or telephone 45-60 minutes surveys (ACL, n.d.). Questionnaires explored myriad aspects of adult life including social integration and physical activities, life satisfaction and personality, social relationships and support, health and medical care, work and stress, and demographics (ACL, n.d.). In later waves (e.g., four and five) of data collection, proxy interviews (e.g., a significant other or family member participated in the interview and answered questions on behalf of the interviewee) were incorporated due to possible hearing, mental, physical, or other impairments and disabilities. In the following section, I describe the variables used in this research.

Dependent Variable

Life satisfaction was assessed by self-report through a single item, “How satisfied are you with your life as a whole?” (ACL, n.d.). Although there are several factors that contribute to one’s life satisfaction, the authors of the ACL study (House & Burgard, 2012) viewed life satisfaction as a holistic construct, which could be summed up by one question. As stated in chapter two of this dissertation, life satisfaction is an overall assessment of feelings about life fulfillment and life contentment (Stevens-Ratchford, 2011) and older adults typically assess life satisfaction through a subjective comparison of the past relative to the present or the future (Ryff, 1991; Shmotkin & Hadari, 1996). The same one-question from the ACL dataset has been used by many previous researchers (e.g., Fiori et al., 2006; Janke et al. 2008(a); Kahng, 2008; Li, 2007; Nimrod et al., 2009) to assess the present life satisfaction of their participants. None of the authors, however, provided information regarding the validity or reliability of the measure, nor is this provided in the ACL codebook (House, 2012). Because of this, I offer a possible alternative approach to measuring the construct of life satisfaction in chapter five.

Participants rated their life satisfaction on the following 5-point Likert scale; 1 - completely satisfied, 2 - very satisfied, 3 - somewhat satisfied, 4 - not very satisfied, 5 - not at all satisfied. To obtain the change in life satisfaction, each participant’s life satisfaction assessments both prior to loss and after loss had to be extracted from the data base. The date of loss was used to determine the closest wave prior to loss and I used that rating of life satisfaction as the “prior life satisfaction assessment.” For the measure of

life satisfaction after loss, I used the latest wave (i.e., either wave four or wave five) in which life satisfaction was reported. The life satisfaction change variable was the difference between the life satisfaction rating after loss and the life satisfaction rating prior to loss, respectively. Since the life satisfaction variable was measured on a 5-point Likert scale, the value of life satisfaction change variable ranged from -4 to +4, inclusive. Due to the way the Likert scale for the life satisfaction variable was structured (with 1 being completely satisfied and 5 being not at all satisfied), a positive life satisfaction change score actually indicates that the participant's life satisfaction assessment deteriorated since the time of loss, while a negative life satisfaction change score indicates that the participant's life satisfaction assessment improved since the time of loss.

Independent Variables

Time Since Spousal Loss. Time since spousal loss was treated as a continuous variable and was measured in years between the year in which the participant lost a spouse and the last completed survey, either at wave four (2002) or wave five (2012).

Change in Physical Leisure Participation. Leisure participation was measured in the ACL study by participants noting their involvement in various different leisure activities, including both non-physical activities and physical activities (ACL, n.d.). The individual's engagement in these activities was collected through self-reported measures.

Participants were asked about frequency of their involvement in various formal, informal, and physical activities (House, 2012). Formal activities included attending meetings; whereas informal leisure activities included talking and or visiting with friends

and family (House, 2012). Physical leisure participation included activities such as walking, gardening, and sports/exercise activities. All activities were separated into two groups: physical leisure participation (e.g., walking, gardening, and sports/exercise activities) and non-physical leisure participation (e.g., talking on the phone, visiting friends, attending meetings) (House, 2012).

Each of the non-physical activity categories was measured on 6-point Likert scale from a score of 1 which indicated “more than once a week” to a score of 6 which indicated “never participating” (House, 2012). A composite non-physical leisure activity score was obtained by first taking a 50% - 50% average of the talking on the phone and visiting friends scores to obtain informal leisure participation score. This informal leisure participation score ranged from 1 to 6 with the option of half point increments (House, 2012). Participants were also asked about attending meetings which were considered to be a formal social activity using a 6-point Likert scale with 1 indicating “more than once a week” to 6 indicating “never participating” (House, 2012). The composite non-physical leisure activity score was obtained by adding together informal leisure participation score to the formal leisure participation score. This composite score ranged from 2 to 12 with half point increments possible.

I calculated a composite non-physical leisure activity score for each participant both at the wave just prior to time of spousal loss as well as for the most current wave after the time of spousal loss. The non-physical leisure participation change score was a difference between the composite non-physical leisure participation scores after the time of spousal loss and before the time of spousal loss, respectively. Since the composite non-

physical leisure participation change variable was measured on a 2 to 12 point scale, the value of non-physical leisure participation change variable ranged from -10 to +10, inclusive, with half point increments possible. Due to construction the way of the Likert scale for the components of the composite non-physical leisure participation variable was structured (with 1 being most frequent and 6 being none at all), a positive composite non-physical leisure participation change score indicated that the person's non-physical leisure participation reduced since the time of spousal loss (a reduction of participation), while a negative composite non-physical leisure participation change score indicated an increase in non-that the person's non-physical leisure involvement increased since the time of loss.

In regards to participation in physical leisure activities, participants were asked about the frequency of their involvement in walking, gardening, and sports/exercise activities (House, 2012). Each of these items were answered on a 4-point Likert scale ranging from 1 indicating "more than once a week" to 4 indicating "never participating" (House, 2012). A composite physical leisure participation score was obtained by taking a $\frac{1}{3}$ - $\frac{1}{3}$ - $\frac{1}{3}$ average of these three components. Hence, the composite physical leisure participation score ranged from 1 to 4 with $\frac{1}{3}$ increments possible.

I calculated a composite physical leisure activity score for each participant both at the wave just prior to time of spousal loss and for the most current wave after the time of spousal loss. The physical leisure participation change score was a difference between the composite physical leisure participation scores after the time of spousal loss and before the time of spousal loss, respectively. Since the composite physical leisure participation

change variable was measured on a 1 to 4 point scale, the value of physical leisure participation change variable ranged from -3 to +3, inclusive, with one-third point increments possible. Due to the way that the Likert scale for the components of the composite physical leisure participation variable was structured (with 1 being most frequent and 4 being none at all), a positive composite physical leisure participation change score indicates that the subject's physical leisure participation decreased since the time of loss, while a negative composite physical leisure participation change score meant that the person's physical leisure involvement increased since the time of loss.

Non-physical and physical leisure participation change scores were initially considered as possible independent variables for this study. As measured by the Pearson correlation coefficient, there was a significant relationship between only the physical leisure participation change variable and the dependent variable, change in life satisfaction. I discuss this further in chapter four. As a result, the non-physical leisure participation change was omitted as an independent variable for this study.

Gender. Moderating variables tend to influence the relationship between variables; they change the strength of an effect or relationship between two variables (Remler & van Ryzlin, 2011). In my study, gender was considered a moderating variable; specifically, being male or female might influence the relationship between the physical leisure participation change and life satisfaction change. Gender was one of the demographic items reported by participants in the initial data collection (wave one) with participants reporting their biological sex as a binary categorical variable: male or female

(House, 2012). For purposes of this study, the categories utilized for this variable were male and female.

Control Variables

In addition to the aforementioned variables, demographic information factors (i.e., age at time of loss, race, SES, educational level, employment status) were considered as control variables. Control variables may impact the relationship between the independent and dependent variables (Field, 2009; Remler & Van Ryzin, 2011). For example, age at time of spousal loss may influence the widowed older adult's life satisfaction level. In other words, life satisfaction might be different for those older adults who lost a spouse in their early 60s as opposed to those older adults who lost their spouse in later 80s. The following is a description of factors that were considered to be control variables for this research study.

Age at Time of Loss. Age at time of loss was calculated from the data provided in the ACL database by summing the participant's age at wave one (which occurred in the year 1986) and the number of years between 1986 and the year in which the participant lost the spouse as reported in the database. This variable was a continuous numerical variable in this study.

Race. The race variable given in the ACL database was collapsed into White and non-White categories for purposes of the study. I did this because there were relatively few participants who identified themselves by selecting any of the various other options of racial categories utilized in the database. The race variable was a categorical variable.

SES. There were four categories of SES utilized in the ACL database: low SES, lower-middle SES, higher-middle SES, and high SES (House, 2012). SES was assessed only in wave one. Since each of these categories contained a viable number of participants, no categories were combined for purposes of this analysis.

Educational Level. In the ACL database, there were three possible educational levels: no high school diploma, high school diploma, and bachelor's degree (House, 2012). For credibility purposes, the first two categories were combined into a single category. Hence, for purposes of my study, the variable of educational level had two categories, non-college graduate and college graduate.

Employment Status. There were eight possible employment categories included in the ACL database. Since the majority of the participants were retired and only a few were employed full or part time (House, 2012), I utilized two categories for this study: employed and non-employed at wave four or wave five.

Procedures

Following approval from Montclair State University's Institutional Review Board (IRB; see Appendix A), the investigator started the data cleaning and statistical procedures in order to analyze the data and test hypotheses. Steps included extracting the participant data records from the ACL database, reducing this group of records to participants who met the criteria of the study, and finally checking these records for missing data fields and eliminating any records that did not provide all pertinent variable information.

Data Extraction and Reduction

To begin the data analysis procedure, I downloaded participant records from the ACL database directly into Statistical Package for the Social Sciences (SPSS), a software package used for statistical analysis (Remler & Van Ryzin, 2011). Since the ACL database contained over 3,000 data fields for each participant, I only extracted those fields that were needed to compute necessary variables and other information to be used in this study. I used the codebook provided by IUCPSR (<http://www.isr.umich.edu/acl/ACLPublicCodebookWaves1-5.pdf>) to select the relevant fields. While some of the selected participant fields did not vary by wave (e.g., gender, race) other fields did vary by wave (e.g., life satisfaction, physical leisure participation, widowhood status). For the latter type, I extracted information at waves one, four, and five. Data from waves two and three were not utilized due to my focus on widowers who were alive at the later waves of this study (i.e., waves four and five).

Once the necessary fields were extracted for all participants in the ACL database, the next step involved elimination of any participants who did not meet the criteria of the study. First, I eliminated any participants who were not widowed either at wave four or wave five, after which I eliminated participants who were under the age of 65 at the latest wave for which data for the participants were reported. To determine a given participant's age at a particular wave, I took the participant's reported age at wave one and added the number of years between the time of the initial wave one (i.e., 1986) and the time of the latest wave for which data were reported (i.e., either 2002 for wave four or 2012 for wave five).

Data Cleaning

Once the subset of records that met the eligibility criteria for the study was obtained, I examined the relevant fields of each participant to detect any missing data. In particular, the fields necessary to compute values for the dependent variable, the independent variables, and the control variables as discussed above were examined for missing or invalid data. In most cases, records that contained one or more relevant fields with missing/invalid data were eliminated from the data file. There were a few cases in which I was able to determine the correct value for that particular field for the participant from other information in the database. In such instances I manually inserted the correct data value into the field. For example, participants were asked if they became widowed since the last interview with possible answers yes=1 and no=5. Then the participants were asked in what year they lost a spouse and participants reported a year of loss. If someone reported a specific year but would have no=5 as a response in the first questions, I would change that entry into yes=1. Upon completion there were 222 records in database that met the criteria for this study. This sample size exceeded the target sample size of $n = 175$ required to produce a .80 statistical power level with three predictor variables as determined by G*Power software.

Even though the data from the ACL database was initially extracted to SPSS, I utilized Microsoft Excel to perform most of the record elimination and data cleaning. Microsoft Excel was also used to compute some of the variables (e.g., non-physical and physical leisure participation, age at time of loss) needed in the analysis from the fields

extracted from the ACL database. Once these steps were completed, the final database was re-uploaded to SPSS for statistical analyses.

Descriptive Procedures

With the filtered data file, descriptive statistics were calculated for the dependent variable, the independent variables, and each of the control variables. For each of the categorical (e.g., nominal) variables, I generated a frequency distribution showing the number and percentage of subject in each possible category. For the continuous variables (e.g., scale) variables, an exhibit showing the sample mean, standard deviation, and range for each variable was produced. The normality of the dependent variable was checked.

Data Analysis

Using the final SPSS database of 222 participants, my first step in the data analysis was to determine which of the control variables and independent variables described above had significant relationships with the dependent variable – change in life satisfaction. I determined these variables by generating a correlation matrix in SPSS showing Pearson correlation coefficients and their corresponding statistical significance. A secondary purpose of the correlation matrix was to determine if any significant correlations existed between any pairs of the predictor variables (i.e., control or independent variables). Results of analyses are provided in chapter four.

Additionally, I performed five hierarchical linear regressions in this study using SPSS to investigate the predictive value the independent variables had on the outcome variable. While each of these regressions used *change in life satisfaction* as a dependent variable, the models employed different sets of predictor variables. These predictor

variables are those that had significant correlations with the dependent variable, namely age at time of loss, physical leisure participation change, and gender. In addition, previous authors (e.g., van Baarsen & van Groenou, 2001) included years since loss as a predictor variable and suggested that this variable had a significant impact on life satisfaction of older widowed adults. The first step of this hierarchical model was a simple linear regression using the control variable age at time of loss as the sole predictor variable. The second hierarchical regression model included two predictor variables: (1) control variable age at time of loss, and (2) the independent variable years since loss. The third step included the control variable age at time of loss as well as the independent variable change in physical leisure participation; however, the years since loss variable was excluded from this model due to its non-significant relationship with the dependent variable as evidenced in the previous step. In the fourth step, gender was included as an additional predictor variable together with the two predictors, age at time of loss and physical leisure participation change from Step 3. In Step 5, an interaction term between the physical leisure participation change and gender was included along with the three predictor variables present in Step 4. The results of these hierarchical regression models are described in chapter four.

Preliminary Testing and Assumptions

Before running a regression model, certain assumptions pertinent to regression are to be met. First, there needs to be a significant linear relationship between each predictor and dependent variable (Field, 2013). As discussed above having a statistically significant linear relationship with the dependent variable as determined by Pearson's correlation

coefficient was a requirement for each of the predictor variables to be included in hierarchical models (Field, 2013). With the exception of the years since loss variable, the predictor variables utilized in the hierarchical regressions all had statistically significant linear relationships with the dependent variable as measured by their Pearson correlation coefficients.

Second, multicollinearity issues between the predictor variables were checked. Multicollinearity refers to high correlations among predictor variables themselves, which is considered potentially problematic because if two variables are extremely highly correlated, it would not be possible to determine their independent contributions to the regression model (Field, 2009). To detect multicollinearity, Pearson correlation coefficients were calculated for each possible pair of predictor variables. Any pair of variables which exhibited a correlation greater than .50 was examined. None of the four predictor variables used in the hierarchical regressions had strong pairwise Pearson correlations with each other. In addition, any predictor variable with a significant variance inflation factor (VIF) value was examined. None of the predictor variables gave rise to VIFs greater than 2.00. A VIF greater than 2.00 signifies that over 50% of the variance of the given predictor variable is explainable by the variances of the other predictor variables utilized in the particular regression model (Field, 2009). In other words, a high VIF suggests that a given predictor variable is strongly related to the other independent variables present in the model.

The third assumption is that the regression residuals need to be normally distributed. The regression residuals refer to the differences between the actual values of

the dependent variable and corresponding predicted values of the dependent variable (Field, 2013). To determine if the regression residuals were normally distributed, the Shapiro-Wilk normality test was used. Except for the forth model the distributions of the regression residuals were significantly different from normal with p values ranging from .003 to .044. Even though the normality requirement was not met for four of the models, according to Field (2013) this requirement may be waived due to the central limit theorem since the size of sample used in the study ($n = 222$) is large. I provide additional discussion of the non-normality of the residuals in chapter four of this document, noting differences between the issues related skewness and those related to a leptokurtic distribution of dependent and independent variables, which is not a shortcoming of linear regression, (Field, 2013). Next, when examining the regression residuals, there should be no autocorrelation between them. Autocorrelation refers to the degree of influence that the value of a given regression residual has on the values of the regression residuals adjacent to it when the residuals are ordered in terms of their corresponding predicted values (Field, 2009). The Durbin-Watson statistic was used to determine autocorrelation. The possible values of the Durbin-Watson statistic range from 0 to 4 (Field, 2013). Values at or about 2 indicate little or no autocorrelation, whereas values closer to 0 or 4 suggest significant positive or negative autocorrelation, respectively (Field, 2013; Warner, 2013). As a rule of thumb, a Durbin-Watson statistic falling between 1.50 and 2.50 indicates that there is no meaningful autocorrelation in the data (Field, 2013; Warner, 2013). The Durbin-Watson statistics for all five models fell within this range.

Finally, homoscedasticity of variance among the regression residuals needs to be present. Homoscedasticity refers to a situation where the magnitudes of the regression residuals tend to be the same across all values of the predicted dependent variable (Warner, 2013). Examining a scatter plot of the regression residuals against the predicted values of the dependent variable is a useful way of determining homoscedasticity (Warner, 2013). The scatter plot should have a rectangular shape as opposed to a funnel or V-shape (Warner, 2013). The scatterplots of all five regression models had rectangular shapes suggesting that the homoscedasticity of residuals assumption was met for each of the models.

Post-Hoc G*Power Analyses

After running five hierarchical regression models, I performed G*Power analyses on a post-hoc basis to determine the realized statistical power levels for each of the models. These post-hoc G*Power runs differed from the a priori G*Power analyses discussed in the sample size section at the beginning of this chapter in that the post-hoc runs used information (e.g., sample size, number of predictor variables, effect size) from the actual hierarchical regression analyses rather than assumptions for these items. With the exception of the second model (whose realized power was .74), the post-hoc G*Powers for the remaining regression models produced realized power levels exceeding the recommended .80 power level for statistical analyses in the social sciences (Cohen, 1992; Remler & Van Ryzin, 2011). These results suggest that the actual sample size of $n=222$ participants utilized in this study was sufficient.

Summary

After summarizing the research questions and hypotheses, in this chapter I have described the research methods and design utilized in this study and provided a description of the database used and the analytic sample drawn from this database. For the latter items, I discussed details on how I extracted the data from the database as well as the data cleaning procedures I used. I also discussed the dependent, independent, and control variables utilized in this study. Finally, the methods I used to analyze the data were described along with the necessary assumptions needed to perform these procedures. Results of the data analyses are detailed in the next chapter.

Chapter Four

Introduction

In my study I examined variables that can potentially predict changes in life satisfaction in widowed older adults. The relationships between time since spousal loss, changes in physical leisure participation, and gender were examined in relationship to changes in life satisfaction (life satisfaction change). An additional control variable, age at time of loss, was also considered based on its previously established relationship with life satisfaction in widowed older adults.

In this chapter I have provided descriptive statistics that were calculated for the dependent variable, the independent variables, and each of the control variables. Further, analytical results for the inferential statistical analyses used to answer each of the above mentioned research questions are described. As mentioned in chapter three, these inferential statistical analyses were in the form of hierarchical regressions. For the purposes of the statistical analyses performed, a significance level of $\alpha = .05$ was utilized.

Descriptive Results

With the filtered data file, descriptive statistics were calculated for the dependent variable, the independent variables, and each of the control variables. For each of the categorical (e.g., nominal) variables, a frequency distribution showing the number and percentage of subjects in each possible category was generated. For continuous variables (e.g., scale), an exhibit showing the sample mean, standard deviation, and range for each variable was produced.

Table 2

Demographic Information for Widowed Older Adults (unweighted)

Variables	<i>N</i>	%
<u><i>Race</i></u>		
White	157	(71%)
Non-White	<u>65</u>	<u>(29%)</u>
	222	
<u><i>Gender</i></u>		
Female	180	(81%)
Non-Female	<u>42</u>	<u>(19%)</u>
	222	
<u><i>Education Level</i></u>		
College	32	(14%)
Non-College	<u>190</u>	<u>(86%)</u>
	222	
<u><i>Employment</i></u>		
Employed	23	(10%)
Non-Employed	<u>199</u>	<u>(90%)</u>
	222	
<u><i>SES</i></u>		
Low	53	(24%)
Low-Middle	65	(29%)
High-Middle	76	(34%)
High	28	(13%)
	222	

The results noted in Table 2 show that the majority of the participants in my study were White and over 80% were female. In addition, only 14% of the participants had a college degree, and only 10% were employed. The reported employment status was not

surprising given that this sample consisted of adults aged 65 and older. For SES, while only 13% of subjects were in the high SES category, remaining participants were evenly distributed amongst the remaining three SES categories.

Before elaborating on descriptive results, it might be helpful to review the scoring of the life satisfaction change variable. As mentioned in chapter three, to obtain the change in life satisfaction score, each participant's life satisfaction assessments prior to loss and after loss were extracted from the database. Due to the structure of the Likert scale for the life satisfaction variable (1 being completely satisfied to 5 being not at all satisfied), a positive life satisfaction change score indicates participants' life satisfaction assessment *declined* since the time of loss, while a negative life satisfaction change score indicates that the participant's life satisfaction assessment *improved* since the time of loss.

Table three shows means, standard deviations, and range for the continuous variable utilized in this study. The mean life satisfaction change score of .09 indicates

Table 3

Descriptive Information for Widowed Older Adults

				Range	
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Life Satisfaction Change	222	.09	1.14	-3	4
Non-physical Leisure Change	222	-.07	2.53	-8	7.5
Physical Leisure Change	222	.38	.90	-2.3	3
Years Since Loss	222	5.67	3.85	1	23
Age at Time of Loss	222	72.03	9.39	47	94

that on average widowed older adults experience little life satisfaction change following the spousal loss. Similarly, both the mean scores for both non-physical and physical leisure participation change were close to zero, indicating that widowed older adults on average experience little change in the frequencies of their non-physical and physical leisure activities following spousal loss. Furthermore, the distributions of the scores for each of these three variables yielded normal distribution and some leptokurtic distributions. Please refer to earlier descriptions of the assumption of logistic regression in chapter three.

The majority of the life satisfaction change scores (83.8% of participants) and the physical leisure participation change scores (79.7% of participants) fell between -1 and 1 and the majority of the scores for non-physical leisure participation changes fell between -2.5 and 2.5 (85.6% of participants). These results further support the notion that most participants exhibited minimal changes in each of these areas following spousal loss.

I performed normality tests for both variables life satisfaction change and physical leisure participation change. The Shapiro-Wilk test showed that the distributions of both of these variables were significantly different from normal. A further review of the skewness and kurtosis for the life satisfaction change variable revealed that the non-normality of this variable was primarily due to its leptokurtic shape. One possible reason for this shape is the fact that the life satisfaction variable had a restricted range from -4 to +4. Another reason for non-normality of this variable is the fact that the variable was discrete (i.e., can only have integer values) rather than continuous. Lastly, the leptokurtic

distribution may be due to the fact that there was very little change in the scores between pre- and post-loss.

The leptokurtic distribution of the change in physical leisure participation scores was also a result of its restricted discrete range. Recall that the values for this variable range from between -3 and +3 in one third increments. While this variable was slightly less kurtotic than the life satisfaction change variable, it still had a noticeable leptokurtic shape.

As mentioned in chapter three, the distributions of the regression residuals for four of the hierarchical regression models were non-normal in shape. One possible explanation for this is the restricted ranges for both the life satisfaction change dependent variable and physical leisure participation change predictor variable. In theory, a linear regression model should employ a continuous dependent variable with an unrestricted range as well as numerical predictor variables that also display these characteristics (Field, 2013). Field (2013), however, noted that from a practical standpoint one could use a variable in a regression model that either has some restriction to its range (e.g., being a positive value or having some maximum value) or is discrete and still produce reasonable results. The problem occurs when the range is either too restricted or when there are a limited number of possible outcomes for a discrete variable. The two variables in this study do possess both of these characteristics.

In relation to the above discussion, please note that the leptokurtic distribution of the life satisfaction change dependent variable and the physical leisure participation change predictor variable is not a shortcoming in performing linear regression. However,

after performing linear regression, the residuals of those variables need to be normally distributed. Since they are not (four out of five were not normally distributed), this presents a limitation of the linear regression model outcome (Field, 2013).

The mean number of years since spousal loss was 5.67 meaning that the older adults in this sample were widowed on average for approximately six years at the time they participated in their latest interviews. In this sample 93.2% of the subjects at the time of their last interviews lost their spouse 10 or fewer years ago. Ninety one percent of the participants were age 60 or older at the time of spousal loss with the mean age at time of loss being 72.03.

Correlation Analysis

The first step of data analysis was to determine which of the control variables and independent variables described in chapter three had significant relationships with the dependent variable – change in life satisfaction. This was accomplished by generating a correlation matrix (see Table 4) in SPSS showing Pearson correlation coefficients and their corresponding statistical significances.

The correlation matrix (Table 4) shows that the control variable of age at the time of spousal loss, the independent variables of changes in physical leisure participation (physical leisure participation change), and being female had statistically significant correlations with the dependent variable – life satisfaction change. The age at time of loss had a weak-to-medium statistically significant positive correlation of .20 with the dependent variable suggesting that being widowed later in life tends to contribute to a

Table 4

Correlation

	1	2	3	4	5	6	7	8	9	10	11	12
1. Life Satis Change	...											
2. Years Since Loss	-.10	...										
3. Non-physical LPC	.10	-.01	...									
4. Physical LPC	.21**	-.07	.04	...								
5. Female	-.19**	.05	.07	-.01	...							
6. Age at Time of Loss	.20**	-.38**	-.00	.23**	-.06	...						
7. White	.04	-.08	.01	.11	.04	.22**	...					
8. Education	-.03	-.03	.13*	-.06	.00	.00	.07	...				
9. Employment	-.05	-.03	.03	-.09	-.10	-.30**	-.01	.16	...			
10. Low SES	.07	.08	-.02	-.09	-.03	-.11	-.34**	-.23**	-.02	...		
11. Lower-Middle SES	-.09	.06	-.06	.08	.06	.06	.07	-.18	-.24	-.36	...	
12. High SES	-.01	-.01	.11	-.04	-.02	-.01	.10	.93	.14	-.21	-.24	...

Note: n = 222. * p < .05. ** p < .01.

more severe deterioration in life satisfaction. The physical leisure participation change also had a weak-to-moderate positive correlation of .21 with the dependent variable, suggesting that a decrease in physical leisure participation following spousal loss correlates with a corresponding decrease in overall life satisfaction. Conversely, the results indicate that if widows or widowers increase their physical leisure participation following the loss of a spouse, they will also experience an increase in overall life satisfaction. Lastly, being female had a weak-to-moderate statistically significant negative correlation of -.19 with life satisfaction change.

Due to the way the gender variable was coded (with 1 indicating female and 0 indicating male) and the way the change in life satisfaction variable was calculated, this statistically significant negative correlation of -.19 indicates that women participants tended to experience a lesser degree of deterioration in life satisfaction following spousal loss than did males. In a similar vein, my results revealed no significant correlation between non-physical leisure participation and changes in life satisfaction. In relation to the employment and educational level variables, results yielded non-significant relationships with life satisfaction change.

For purposes of the hierarchical regression analyses performed in this study, I utilized only the predictor variables cited above that had significant correlations with the dependent variable. My rationale for utilizing only predictor variables was because including non-significant predictor variables in a regression model often reduces the overall predictive capability of the model by lowering the adjusted R^2 value for the regression (Field, 2013). My inclusion of the variable of time since spousal loss was the

only exception. Even though this variable had a non-significant correlation with life satisfaction change, it was included in the hierarchical regression because the reviewed literature provided evidence that this variable was relevant when considering spousal loss and adjustment to such loss (Hagedoorn, et al., 2006; van Baarsen & van Groenou, 2001; Wilcox et al., 2003).

A secondary purpose of the correlation analysis was to detect any significant correlations between pairs of the predictor variables to be used in the hierarchical regressions. Conducting the correlation analysis addressed the requirement that predictor variables utilized in multiple regression analyses not be highly correlated with each other. As indicated in Table 3 one can see that out of the four predictor variables, which were used in the hierarchical regression, there was a statistically significant correlation of $-.38$ between age at time of loss and years since loss as well as a statistically significant correlation of $.23$ between age at time of loss and physical leisure participation change. The first correlation may be explained due to the age of participants; an older person who is widowed later in life would most likely be widowed for fewer years than somebody who became widowed at a younger age. The second correlation is also logical since people widowed at an older age tend to experience a greater decline in physical leisure (Chen et al., 1999; Wilcox et al., 2003) when compared to the participation of those who lost a spouse at a younger age. Despite these significant correlations, all of these predictor variables were utilized in the analysis since none of these correlations were strong in magnitude (i.e., r greater than $.50$).

Analytic Results

After completing the correlation analysis, my next step was to determine the order and components of the hierarchical regressions. For the first regression, the research included age at time of loss, the only statistically significant control variable, as the sole predictor variable. The second model included age at time of loss as well as years since loss as predictor variables. The third model incorporated physical leisure participation change along with two predictor variables included in the second model. The fourth model included gender as an additional moderating predictor variable. Finally, the fifth model included an interaction term between gender and physical leisure participation change along with all of the predictor variables included in the previous models. These five hierarchical regression models follow the five research questions discussed previously.

Hierarchical Regression Results

As a baseline, the first step of this hierarchical model was a simple linear regression using the control variable age at time of loss as the sole predictor variable. As shown in the Step 1 column of Table 5, this regression was statistically significant as evidenced by its ANOVA F statistic $p < .01$. The standardized beta for the age at time of loss variable was ($\beta = .19, p < .01$). The direction and magnitude of this standardized beta suggests that age of time of loss has a weak positive relationship with the change in life satisfaction variable. Because of the way the change in life satisfaction was calculated, as previously noted, this positive relationship between the two variables indicate that

Table 5

Summary of the Hierarchical Regression Analysis for Predicting Life Satisfaction Change

Variable	Step 1			Step 2			Step 3			Step 4			Step 5		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Age at Time of Loss	.02	.01	.20**	.02	.01	.18**	.02	.01	.15*	.02	.01	.14*	.02	.01	.13*
Years Since Loss				-.01	.02	-.04									
Physical LP Change							.23	.09	.18**	.03	.09	.18**	.35	.22	.28
Female										-.53	.19	-.18**	-.45	.20	-.16*
Physical LP Change*Female													-.14	.23	-.11
ANOVA F Statistics	8.15**			4.20*			7.75**			8.04**			6.11**		
F Change Statistics	8.15**			2.63			7.75**			8.13**			.38		
Adjusted R ²	.03			.03			.06			.09			.09		

Note: n = 222 * $p < .05$ ** $p < .01$

persons who lost a spouse at later ages tend to experience a greater degree of decline in life satisfaction as compared to those who lost a spouse at younger ages.

The B coefficient (also known as the slope coefficient) provides information on the magnitude of the change in the dependent variable given a unit increase in the value of the predictor variable (Field, 2009). For the age at time of loss variable, the B coefficient was .02 meaning that each additional year later in life that a person becomes widowed corresponds with a .02 increase in the life satisfaction change variable. Given the way that the definition of the life satisfaction variable was calculated, this .02 increase translates into a small decrease in the widow's overall degree of life satisfaction. Despite its statistical significance, the meaningfulness of this coefficient from a practical perspective is meager. For example, a ten year difference in the age at time of spousal loss (e.g., age 80 versus age 70) would translate into only a .20 point decrease in life satisfaction level while a 20 year difference in the age at time of loss (e.g., age 90 versus age 70) would result in only a .40 point decrease in life satisfaction.

The coefficient of determination (denoted as R^2) for a regression model gives the percentage of variation in the dependent variable that is explainable by the predictor variable(s) in the model (Field, 2013). Since the coefficient of determination is by nature biased on the high side (especially for small samples) statisticians sometimes utilize a measure known as adjusted R^2 in an attempt to correct for the bias in the coefficient of determination (Field, 2009). Although not depicted in Table 5, in a hierarchical model an adjusted R^2 change for each step can be computed by taking the difference between the adjusted R^2 amounts for the current and previous steps, respectively. In this model, the

adjusted R^2 change of .03 for Step 1 indicates that 3% of the variability in the dependent variable was explained by the age at time of loss control variable. This adjusted R^2 contribution was considered statistically significant, as indicated by the significant F change statistic.

To address research question one, I ran a second hierarchical regression model. The following two predictor variables were used in this model: (1) control variable age at time of loss, and (2) the independent variable years since loss. The Step 2 columns of Table 5 reveal that this regression as a whole was statistically significant as evidenced by the p value of the ANOVA F statistic, $p < .05$. For the age at time of loss variable, the standardized beta was ($\beta = .18, p < .05$), which was close to the standardized beta value obtained for this variable on the previous step. On the other hand, the standardized beta for the years since loss variable was not statistically significant. This outcome is consistent with the fact that there is no significant correlation between years since spousal loss and the dependent variable, life satisfaction change. From this result one can deduce that the answer to research question one is that there is no meaningful relationship between the years since spousal loss and life satisfaction change. In other words, the hypothesis associated with research question one is rejected.

Furthermore, the adjusted R^2 change (i.e., the difference between the R^2 values for steps 2 and 1, respectively) of .03 indicates that the addition of the years since loss predictor variable to the model did not contribute meaningfully to the overall predictive capability of the model. The non-significant F change statistic of 2.63 for this step further indicates that the addition of years since loss did not contribute to the predictive

capability of the model. The adjusted R^2 change and the F change statistic provide further evidence of the non-significance of the years since loss variable.

With regards to research question two, the researcher performed Step 3 of the hierarchical model. This step included the control variable age at time of loss as well as the independent variable change in physical leisure participation; however, the years since loss variable was excluded from this model due to its non-significant relationship with the dependent variable as evidenced in the previous step.

The Step 3 columns reveal that this regression as a whole was also statistically significant as evidenced by the p value of the ANOVA F statistic, $p < .01$. In this model, the standardized beta for the age at time of loss variable remained statistically significant at ($\beta = .15, p < .05$). The standardized beta for the physical leisure participation change predictor was also statistically significant ($\beta = .18, p < .01$). The direction and magnitude of this standardized beta suggests that physical leisure participation change has a weak to moderate positive relationship with the change in life satisfaction variable. Based on the calculation of the physical leisure participation change variable (please see chapter three for detailed explanation), the positive relationship between the two variables means that people who experience a deterioration in physical leisure participation following the loss of a spouse tend to also experience a decline in overall life satisfaction. Likewise, those who participate to a greater degree in physical activities following spousal loss also tend to experience an improvement in overall life satisfaction.

The B coefficient for the physical leisure participation change variable was .23, indicating that each one point increase in the physical leisure participation change score

resulted in an almost one-quarter point increase in the overall life satisfaction change score. Likewise a decrease in the physical leisure participation change would result in a similar sized decrease in the overall life satisfaction change score. Given the way these two variables were defined, the .23 coefficient reveals that a decline in the physical leisure participation of widowed older adult participants is correlated with a decrease in that person's overall degree of life satisfaction, albeit by a smaller magnitude. Moreover, the adjusted R^2 change of .03 for this step indicates that the inclusion of the change in physical leisure participation predictor variable explained an additional 3% of the variability of the dependent variable.

As explained in the footnote of Table 5, the F change statistic for this step was obtained from an alternative hierarchical regression model that included the non-significant predictor variable years since loss in both Steps 2 and 3. I did this because a valid F change statistic requires that all the predictor variables that appear in the prior step of a hierarchical model also must be included in the given step of the model (Field, 2013). Since the hierarchical model actually performed in this study utilized the years since loss variable in Step 2 but not in Step 3, it was not possible to calculate an F change statistic for Step 3. Instead, an F change statistic was obtained from the alternative hierarchical model described above, which was used as a proxy for the F change statistic for Step 3 in the hierarchical model actually employed in this study.

The significant relationship between physical leisure participation change and the dependent variable life satisfaction change shown in Step 3 provides an answer to research question two. Based on the analysis, there is sufficient evidence to support the

hypothesis that there will be a positive relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change (post-loss versus pre-loss).

Gender was included as an additional predictor variable in Step 4, together with the two predictors, age at time of loss and physical leisure participation change, from Step 3. The reported p value for the ANOVA F statistic being less than .01 indicates that this regression is statistically significant as a whole. Consistent with the previous step, the standardized betas for the age at time of loss and physical leisure participation change were statistically significant. The standardized beta for the gender variable was also statistically significant ($\beta = -.18, p < .01$). The direction and magnitude of this standardized beta suggests that gender has a weak to moderate negative relationship with the change in life satisfaction variable. Since gender was coded as 0 for males and 1 for females, this negative beta reveals that females had lower life satisfaction change scores than their male counterparts did. This result indicates that females as compared to males experience less life satisfaction deterioration following spousal loss.

For the gender variable, the B coefficient was $-.53$ meaning that being female resulted in approximately a one-half point decrease in the overall life satisfaction change score. The coefficient reveals that female participants experienced a slightly lower degree of deterioration in their overall life satisfaction following the loss of a spouse as compared to their male counterparts.

The adjusted R^2 change of .03 for Step 4 implies that the gender predictor variable explained an additional 3% of the variability of the life satisfaction change dependent

variable. This meaningful contribution of the gender variable to the model is further supported by the statistically significant F change statistic for this step.

In Step 5, an interaction term between the physical leisure participation change and gender was included along with the three predictor variables present in Step 4. The purpose for including this additional term was to see whether the relationship between the physical leisure participation change and life satisfaction change differed between the two gender categories. The Step 5 columns reveal that this regression as a whole was statistically significant as evidenced by the p value of the ANOVA F statistic, $p < .01$.

In the Step 5 model, the age at time of loss and gender predictor variables remained statistically significant as evidenced by p values of their standardized betas, $p < .05$ for both variables. On the other hand, the standardized beta for the physical leisure participation change variable became non-significant, despite the fact that the standardized beta for the interaction term was also non-significant. The non-significant interaction term signifies that the relationship between the physical leisure participation change and life satisfaction change did not vary by gender. Based on the aforementioned result, the hypothesis associated with research question four is rejected.

Summary

This chapter provided a detailed discussion of descriptive data, analytical procedures utilized, and the results of the hierarchical regression models. These models highlighted the contributions each of the statistically significant predictor variables had on the dependent variable, life satisfaction change. These predictor variables included the control variable age at time of loss, as well as the independent variables physical

leisure participation change, and gender. Although promulgated in research Question One, the independent variable of years since loss did not have a significant relationship with the dependent variable.

Both age at time of loss and physical leisure participation change had a weak-to-moderate positive relationship with the dependent variable, while gender had a weak-to-moderate negative relationship with the dependent variable. Based on the way these variables were defined, it appears that older widowed adults tend to experience greater life satisfaction deterioration following the spousal loss than do younger people and that being female tends to mitigate the magnitude of this life satisfaction decline. Increased participation in physical leisure activities, however, appears to have some positive effect on life satisfaction of widows. This impact of physical leisure participation tends to impact females and males in a similar manner as evidenced by the non-significant interaction term in Step 5.

The influence of the three statistically significant predictor variables can also be expressed in terms of the contributions that they make to the hierarchical regression model as a whole. Age at time of loss, physical leisure participation change, and gender each explain 3% of the variation in the dependent variable life satisfaction change cumulating to a total of 9% of the variability in the dependent variable attributable to these three predictors. Despite the fact that several other predictor variables (e.g., years since loss, non-physical leisure participation change, race, education, employment, and SES) were considered in this study, none of these variables had any meaningful relationships with the dependent variable and hence did not make any significant contributions to the model.

This phenomenon indicates that there must be other factors affecting life satisfaction in widowed older adults that were not captured in this research. I have provided a discussion of the results as well as implications for counselors and other professionals, limitations, and considerations for future research in chapter five.

Chapter Five

Introduction

Life satisfaction, specifically changes in life satisfaction, in widowed older adults after the loss of a spouse has been the focus of my dissertation research. Life satisfaction, a primary factor of subjective well-being, is considered to be an important part of optimal and successful aging (Cavan et al., 1949; Collette, 1984; Diener et al., 1999; Luszcz, 2000, Neugarte et al., 1961; Ranzijn & Stevens-Ratchoford, 2011). Life satisfaction across the life span has been found to be remarkably stable during early and middle adulthood, with a trend of declining in older adulthood (Diener & Suh, 1998; Gerstorf et al., 2008; Mroczek & Spiro, 2005).

Older adulthood is a time of life filled with many gains and losses that require some level of adjustment. While older adults might have advanced their knowledge and skills, many often experience physical, cognitive, and social changes associated with loss. One social change requiring adjustment in later adulthood is the loss of a spouse. Regardless of the conditions surrounding the death of a spouse, such a life event changes one's life circumstances and requires some level of transition and adaptation. Furthermore, life events (e.g., becoming widowed) can impact older adults' engagement with life which can lead to experiences of isolation, anxiety, despair, depression, and overall lack of life satisfaction (Hao, 2008; Lee & DeMaris, 2007; Lucas et al., 2003; Morrow-Howell et al., 2009; Onrust & Cuijpers, 2006; van Baarsen & van Groenou, 2001).

Sufficient evidence exists to indicate that factors such as gender and leisure participation may impact the life satisfaction of widowed older adults (Chen et al., 1999; Hagedoorn et al., 2006; Wilcox et al., 2003). For example, lack of participation in leisure activities has been consistently shown to correlate with lower life satisfaction of widowed older adults (Kleiber et al., 2002; Ong et al., 2004). Previous researchers have presented that gender can significantly influence the type of activities in which widowed older adults engage (Janke et al., 2006; Rodgers, 2004; Wilson & Supiano, 2011).

Some authors have suggested that life satisfaction after spousal loss might actually increase (Bonanno et al., 2002). People may react strongly to widowhood but after some time the majority eventually return to their initial (pre-loss) levels of life satisfaction (Lucas et al., 2003). At the same time, researchers (Lucas, et al., 2003; van Baarsen & van Groenou, 2001) have noted that adaptation time to a spousal loss varies in older adults, with the entire process of adaptation lasting several years. However, the majority of the research literature does not account for either the influence of gender or changes in leisure participation as the time since spousal loss increases. My research considered the variables of time since spousal loss and gender differences with respect to leisure participation change and life satisfaction change.

Another shortcoming of prior research is the focus on levels of life satisfaction of widowed adults utilizing life satisfaction prior to widowhood as one of the predictor variables. While there is undoubtedly a correlation between a person's level life satisfaction before and after loss of a spouse (Lucas, et al., 2003; van Baarsen & van Groenou, 2001), this significant relationship may mask the impact that other factors

might have on the level of post-widowhood life satisfaction. I created a life satisfaction change variable that measured the difference in the level of life satisfaction after and before spousal loss. The goal of utilizing the life satisfaction change variable in this analysis was to better detect and highlight contributions of other relevant factors that affect the well-being of widowed older adults. Similarly, it is important to examine the levels of involvement in leisure activities prior to and after spousal loss as the level of leisure involvement after becoming widowed has been shown to be influenced by a person's involvement in leisure pursuits prior to such loss (Lucas et al., 2003). Therefore, to be a meaningful predictor variable of overall life satisfaction change, I decided to use the change in the level of leisure participation following spousal loss as one of the variables in this study. According to developmental theories, changes in life are inevitable and human beings tend to adapt to such changes in order to survive (Atchley, 1989; Baltes, 1987).

In this chapter, I discuss the results of the analyses in relation to each of the four proposed research questions and hypotheses that guided my study. Each research question will be addressed in the order stated previously in chapter three.

Research Question One

What is the relationship between life satisfaction change (post-loss versus pre-loss) and the time since spousal loss?

Hypothesis 1. Life satisfaction change (post-loss versus pre-loss) of widowed older adult will improve as the time since spousal loss increases.

Research Question Two

Is there a relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change (post-loss versus pre-loss)?

Hypothesis 2. There will be a positive relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change (post-loss versus pre-loss).

Research Question Three

Is there a relationship between life satisfaction change (post-loss versus pre-loss) and being female?

Hypothesis 3. Life satisfaction change (post-loss versus pre-loss) will be less adverse for females.

Research Question Four

Does the relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change differ between females and males?

Hypothesis 4. The relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change will differ between females and males. Furthermore, this chapter includes discussion of previous research findings and relevant theories. Implications for practitioners of the various factors that influence life satisfaction in older widowed adults as well as limitations and suggestions for future research are included within this chapter.

Discussion

This research utilized the Americans Changing Lives (ACL) longitudinal dataset that originated in 1986. Subsequent waves of interviews with participants were conducted in 1989 (wave two), in 1994 (wave three), in 2002 (wave four) and in 2011/2012 (wave five) (ACL, n.d.). The final analytic sample included older adults who participated in the original study and were interviewed again in either wave four done in 2002 or wave five done in 2011/2012. Overall, there was a span of 16 years between wave one and wave four and 26 years between wave one and wave five. All older adults were separated into two groups, widows and non-widows. I included the ACL study participants in my current study if they were at age 65 or older and widowed during at least one of the two last waves of interviews (ACL, n.d.). Doing so resulted in the sample of 222 older widowed adults. Since the ACL database contained over 3,000 data fields for each participant (House, 2012), I extracted those fields necessary to compute variables for my study.

The correlation analysis indicates that some relationships were not statistically significant. For example, my results revealed no significant correlation between non-physical leisure participation and changes in life satisfaction, while several literature sources (Hass, 1999; Krause, 2004; Rowe & Kahn, 1999) have suggested that non-physical leisure participation is related to life satisfaction in widows. The differences between the results of my study and previously conducted studies may be explained by the way these two variables were measured in this study compared to the reviewed literature. I utilized the changes in both life satisfaction and non-physical leisure

participation before and after spousal loss in my data analysis whereas researchers in the studies cited in the literature review compared both of these variables at a single point in time, typically either right before or right after widowhood (Janke et al., 2008; Nimrod et al., 2009).

In relation to employment and educational level variables, this study showed non-significant relationships with life satisfaction change whereas reviewed literature suggested that these variables were correlated with life satisfaction (Hasselkus, 2002; Vaillant, 2002). Part of such discrepancies is the fact that I utilized a life satisfaction change variable, whereas previous researchers cited measured life satisfaction at a single point in time (not the difference between time one and time two). Moreover, my study focused only on older adults (at least age 65), and the fact that individuals were retired may have had less influence on their life satisfaction level because the majority of their contemporaries were in similar circumstances.

A non-significant relationship was found between the SES variable and life satisfaction change. At first glance, this non-significant relationship appears to be the opposite of what is cited in much of the literature (e.g., Aldwin & Gilmer, 2013; Mackenbach et al., 2008). After closer examination, my study correlated SES with the change in life satisfaction before and after being widowed, while previous studies examined the relationship between SES and the level of life satisfaction only after widowhood. Another possible reason for the difference between this analysis and former published works is the point in time in the participants' lives where the SES variable was measured. In most of the studies cited in chapter two, researchers assessed the SES

variable at the time of the widowhood or shortly thereafter (Nimrod et al., 2009). In contrast, the longitudinal data used in my analyses captured the participants' SES statuses only at the first wave (i.e., 1986). Hence, there could be a wide gap between the time of spousal loss and the point in time in which the SES variable was measured. It is plausible that during this period of time there could have been a change in person's SES level that would not have been captured in this study. In the following section I explore the influence of the age at time of spousal loss on changes in life satisfaction in widowed older adults.

As evidenced by the correlation analysis, only the following variables had a statistically significant relationship with the dependent variables: age at time of loss, physical leisure participation change, and gender. Because all of these correlations had low to medium magnitudes of relationship to the dependent variable, I considered only these three variables for further analyses, with one exception. The exception was in relation to research question one, which dealt with the years since loss variable. I retained this research question in the analysis despite this variable's non-significance due to the fact that several literature sources (e.g., (Lucas, Clark, Georgellis, & Diener, 2003; van Baarsen & van Groenou, 2001) indicated that this variable does have an impact on the life satisfaction of widowed older adults.

Age at Time of Loss

The results of this study showed a weak positive relationship between age at time of loss and life satisfaction change. This positive relationship between the two variables indicates that people who lost a spouse at later ages tended to experience a greater degree

of deterioration in life satisfaction when compared to those who lost a spouse at younger ages. The meaningfulness, however, of this small statistical significance is weak. In other words, a ten year difference in the age at the time of spousal loss (e.g., age 80 versus age 70) would translate into only a .20 point decrease in life satisfaction level. Practically, those who lose a spouse in their 80s as opposed to one in their 70s would have a slight (i.e., 1/5 of a point) lower level of life satisfaction. Despite the slight statistical significance, it is important for counselors to be aware of the adverse impact that spousal loss can have on adults who lose a spouse at a later age.

My findings of a slight decline in life satisfaction after spousal loss are inconsistent with previously reviewed literature (Lucas et al., 2003; van Baarsen & van Groenou, 2001), which indicated younger older adults (e.g., 70 year olds) deal with a spousal loss slightly better than older adults (e.g., 90 years old). While there was only a small decrease in life satisfaction in older adults over a longer period of time, the finding is still significant and has implications for counselors in terms of helping older adults with positive movement in life satisfaction and preventing potential chronic loss of life satisfaction. Moreover, slight changes in life satisfaction aligns with the SOC theory, which allows for minor changes as older adults tends to select, optimize, and compensate for losses they are experiencing (Baltes, 1987). This is also consistent with other literature that focused on stability of life satisfaction in older life (Lucas et al., 2003).

Since older adulthood requires adjustment to anticipated losses, there is the likelihood of life satisfaction being affected by such adverse life circumstances. My findings indicate that the life satisfaction change variable is not as much affected in

younger widowed older adults as opposed to older widowed older adults; rather, only a slightly lowered level of life satisfaction is experienced by adults who are widowed later in life. The practical implications of this statistically significant result corresponds with the research findings of Gomez and colleagues (2013). They confirmed life satisfaction of adults across the life span in three specific age groups (e.g., young adults, middle-aged adults, older adults) followed a similar trajectory; starting high in childhood, declining during adolescence, and a showing a gradual increase to approximately the current age life decade of the respondents, and then steadily declining in future life satisfaction (Gomez et al., 2013). On average, participants in all three groups were the most satisfied with their current life, while expecting their future life satisfaction to slightly decrease in the future (Gomez et al., 2013). These results align with the tenets of the selective optimization and compensation theory (Baltes, 1987). Baltes (1987) posited that individuals have an adaptive capacity to perceive their present lives as being the best possible, regardless of age and personality (i.e., dynamic interplay between growth or gains and decline or losses) as a feature of any developmental progression at any given time during the life span (Baltes, 1987).

The fact that individuals adapt with limited change in frequency in leisure participation is consistent with my findings (Janke et al., 2008; Lucas, Clark, Georgellis, & Diener, 2003; Nimrod et al., 2009); despite a statistically significant decline in life satisfaction change for those who are much older than younger older adults, the change in life satisfaction lacks practical significance due to the tendency to perceive current life satisfaction (e.g., at age 60, 70, 80) as the highest (the most satisfied). My findings of the

mean life satisfaction change score of .09 indicates that on average widowed older adults experience little life satisfaction change following spousal loss. Similarly, the mean scores for changes in physical leisure participation were close to zero, indicating that widowed older adults, on average, experience little change in frequency of physical leisure activities following spousal loss. The mean score changes further support results of previous research studies (Diener & Suh, 1998; Gerstorf et al., 2008, Gomez et al., 2013; Mroczek & Spiro, 2005) wherein most participants exhibited minimal changes in life satisfaction and that life satisfaction is rather stable throughout the adult life with a slight decline in later life when dealing with losses.

Time since Spousal Loss

My first research question investigated the relationship between life satisfaction change (post-loss versus pre-loss) and the time since spousal loss. Based on the literature, I hypothesized that changes in life satisfaction (post-loss versus pre-loss) of widowed older adults would improve as the time since spousal loss increased. The results of my study, however, did not support my hypothesis, which is inconsistent with previous findings. For example, Lucas et al. (2003) and van Baarsen and van Groenou (2001) found that the adaptation time to spousal loss varies in older adults, with the entire adaptation process possibly lasting several years. The lack of significance between the time since spousal loss and life satisfaction in my study may be due to the fact that I considered a change in life satisfaction as a dependent variable rather than measuring the life satisfaction dependent variable only at post-spousal loss, as was done in the previous studies mentioned above.

Physical Leisure Participation Change

There was a positive relationship between life satisfaction change (post-loss versus pre-loss) and physical leisure participation change (post-loss versus pre-loss), meaning that people who experienced deterioration in physical leisure participation following the loss of a spouse tended to also experience a decline in overall life satisfaction. Likewise, those who participated to a greater degree in physical activities following spousal loss also experienced an improvement in overall life satisfaction. My finding is similar to results of other studies reviewed in chapter two (e.g., Harrison et al., 2004; Holtslander et al., 2011; Paterson et al., 2007; Steeves & Kahn, 2005).

Older adults involved in jogging, exercising, gardening or playing sports are more likely to experience a slight improvement in life satisfaction change, which implies that physical leisure activities can provide opportunities for experiencing positive emotions resulting in slightly higher levels of life satisfaction, especially during challenging times. Furthermore, older adults who participated in physical activities prior to loss tend to continue to participate in such activities post-loss as well indicated by a miniscule variation in the physical participation change variable. Those who do not participate in the physical activities prior to loss, tend not to participate in such activities after loss. This is consistent with continuity theory (Atchley, 1989). Atchley (1989) posited that certain patterns and routines established in early life are difficult to change despite stressful and difficult times.

Gender

There was a weak to moderate negative relationship between life satisfaction change (post-loss versus pre-loss) and gender, revealing that females had lower life satisfaction change scores than their male counterparts. This result indicates females experience less deterioration in life satisfaction following spousal loss than do males. Consistent with reviewed literature in chapter two, gender is one of the predictors of life expectancy and of quality of widowhood; in other words, widowers tend to experience lower levels of life satisfaction than widows (Stroebe et al., 2001). These lower levels of life satisfaction may be due to widowers experiencing a greater challenge in coping with spousal loss compared to challenges experienced by widows (Bennett et al., 2005). Being female many times means being younger, being more socially connected, and being more resourceful than her partner (Aldwin & Gilmer, 2013; Caserta, 2002). These factors often serve as protectors when dealing with adverse life events (e.g., spousal loss) which results in higher levels of life satisfaction deterioration (Caserta, 2002; Harvard Men's Health, 2010).

There was no significant relationship found in this study among gender, life satisfaction change (post-loss versus pre-loss), and changes in physical leisure participation. I contend the reason the physical leisure participation change variable became non-significant in Step 5 was due to the presence of the interaction term. This term, by definition, was highly correlated with each of its components, namely gender and changes in physical leisure participation. Due to this multicollinearity of the interaction term with its two component variables, the presence of both the interaction

term and the component variables themselves in a multiple regression model may cause one or both of the component variables to become non-significant, even if the interaction term itself is non-significant (Field, 2009). In this instance, the interaction term had a strong statistically significant correlation of $r = .91$ with the physical leisure participation change variable but a weak, albeit nevertheless statistically significant, correlation of $r = .18$ with the gender variable. The interaction term's strong correlation with the physical leisure variable caused the latter variable to become non-significant when the interaction term was included in the model.

The non-significant relationship found in this study among gender, life satisfaction change (post-loss versus pre-loss), and changes in physical leisure participation is inconsistent with previously reviewed literature in which gender was noted by researchers (Iso-Ahola et al., 1994; Stanley & Freysinger, 1995; Janke et al., 2006) as an important factor influencing the relationship between life satisfaction and participation in leisure activities. Despite the fact that being female might influence the selection of physical activities participation (Holtslander et al., 2011; Rodgers, 2004; Wilson & Supiano, 2011; Janke et al., 2006), this variable did not influence the relationships between changes in life satisfaction and leisure participation for the current study. My results confirmed a positive relationship between changes in life satisfaction (life satisfaction change) and physical leisure participation change, however gender did not affect this relationship. This positive relationship may suggest gender continues to have an impact on the way one handles and feels about life satisfaction after spousal loss, meaning that females are less detrimentally influenced by such loss. Holtslander and

colleagues (2011) suggested that women often face many challenges impacting their participation in leisure activities, which require transition and formation of new identity, roles, and mastery of new skills. My results suggest that participation in leisure activities, especially physical leisure activities, and their influence on life satisfaction is not different for women.

My research confirms some earlier findings while conflicting with others. Results of my study align with those of previous researchers regarding the positive relationship between physical leisure participation and life satisfaction. Similarly, my results confirmed previous results wherein gender is related to levels of life satisfaction after spousal loss, with women reporting slightly higher levels when compared to men. On the other hand, my findings did not confirm earlier findings from the study by Lucas and colleagues (2003) who concluded that it takes several years to adjust to spousal loss and to return to almost pre-loss levels of life satisfaction. My results did not indicate a significant relationship between time since spousal loss and life satisfaction change. The lack of significance might be due to my calculation of changes in life satisfaction as opposed to previous researchers utilizing only a life satisfaction variable measured after spousal loss. Age at time of loss in the current study was shown to favor younger older people suggesting that those who lose a spouse at younger older adulthood have a slightly higher life satisfaction than those who lose a spouse 10 or 20 years later. Finally, findings of this study indicate that being a female has no influence on physical leisure participation change in relationship to life satisfaction change. These results align with

continuity theory that there is not much variation in later life, as discussed in the next section.

Continuity Theory and SOC Theory

The theoretical framework for this research has been imbedded in the continuity theory (Atchley, 1989) with support of selective optimization and compensation (SOC; Baltes & Baltes, 1990), which I believe explain the process of changes and necessary adaptations in older life. As previously discussed in chapter two, Atchley (1989) explained that continuity is a primary adaptive strategy for dealing with changes and transitions associated with normal aging. That is, people tend to maintain participation in the same activities they had enjoyed prior to aging and during their life course. Atchley (1989) contended older adults try to preserve and maintain internal and external structures, as well as psychological and social patterns adopted during the life course, by developing stable activity patterns that help them preserve earlier ones. Familiar leisure activities, as well as continued engagement in significant relationships have great importance in restoring meaning and direction after negative life events (Kleiber et al., 2002).

Results of my study support ongoing continuity as evidenced by little variation in changes in physical leisure participation and changes in life satisfaction despite the spousal loss. Mean scores for non-physical and physical leisure participation change were close to zero, indicating that widowed older adults on average experience little change in the frequencies of their non-physical and physical leisure activities following spousal loss.

The majority for both the life satisfaction change scores (83.8% of participants) and the physical leisure participation change scores (79.7% of participants) fell between -1 and 1, supporting the notion that most participants exhibited minimal changes in each of these areas following spousal loss. These findings contribute to existing evidence which support current leisure participation resembling general leisure involvement at an earlier age and the stability of life satisfaction throughout older adulthood despite challenging and stressful events, such as spousal loss (Agahi et al., 2006; Minhat et al., 2013; Nimrod, 2008). It is important to note that despite the little variation between pre- and post- loss in life satisfaction change and physical leisure participation change, I have kept the name of these two variables as “change” due to the mathematical calculation of these two variables as described in chapter three (i.e., pre-loss subtracted from post-loss resulting in a difference).

Results of my study empirically support aspects of continuity theory in later life that require ongoing adjustment. With limited variation in change in leisure participation (e.g., frequencies) and the tendency of some older adults to choose some activities and relinquish others while maximizing application to the ones chosen (SOC model), such patterns were not observed in this study which makes it difficult to fully support the SOC theory (Baltes & Baltes, 1990) in relation to adjustment to spousal loss. Perhaps the SOC model (Baltes & Baltes, 1990) might be present in other aspects of older adulthood (e.g., choosing and being more selective about support systems, living environment, recreation, nutrition) but not in terms of changes in leisure participation in widowhood.

Implications for Practice

My research informs counselors, counselor educators, and professionals working with older populations about some factors influencing life satisfaction change of widowed older adults. Imbedded in continuity theory and SOC theory, results of this study indicate that there is a relationship between a person's gender and life satisfaction, and between physical leisure participation and life satisfaction.

When working with male clients, it is important for counselors to be aware that female participants in this study showed slightly lower levels of deterioration in life satisfaction after spousal loss (i.e., reported higher levels of life satisfaction than their male counterparts). Practitioners, nurses, medical staff, and clergy might be first responders with members of the older population. It would be helpful to educate such personnel about the effects of widowhood on life satisfaction, which may allow for proactive work to minimize the potentially negative impact of spousal loss for both genders, especially men. Such interventions might include educating middle and older adults about the importance of understanding about upcoming changes in later life and challenges associated with them. Next, expanding social support and networking might serve as valuable components of work activities in which older adults can do for themselves. Further, the importance of participating in leisure activities, especially physical activities, along with maintaining their frequency of engagement needs to be communicated clearly to adults, especially older adults. Finally, providing valuable resources to older adults (e.g., counseling, support groups) can be utilized to cope with adversities in later life.

Counselor educators can play a crucial role in working with future counselors, ensuring that students are educated about older adults. It will be imperative for counselor educators to help students learn about the complexity of development in older years, to understand how to help clients navigate gains and losses, and to consider changes in the person's experience in later years. Moreover, educators need to communicate the importance of gender differences in response to spousal loss. Despite some generalizable outcomes based on my research and previously conducted research, it is imperative to approach each older adult as a unique individual and to allow for variation in older adult development.

According to Atchley (1989) continuity is a primary adaptive strategy for dealing with changes and transitions associated with normal aging. On the other hand, some older adults might choose some activities and relinquish others and maximize application to the ones chosen as per SOC model (Baltes & Baltes, 1990). When considering such theories and supported research, which was primarily conducted with White older adults, such concepts might not apply to older adults who do not identify themselves as White. Although some people tend to maintain participation in the same activities enjoyed prior to aging and during their life course, others might choose a different path of living their older years based on cultural and religious precepts (e.g., what might be considered "acceptable" for "older adults" in a specific culture). Therefore, it behooves counselor educators to highlight individual differences during aging with an emphasis on cultural background. It is important for future counselors to become culturally aware and competent when working with this age group, but also to be effective in utilizing

counseling interventions with older adults who are often dealing with multiple challenges and adjustments in their later life.

Counselor practitioners might utilize a slightly different approach in counseling older men as opposed to older women. Based on the results of this study, men may need a more supportive, validating, and empathic approach, which promotes a strong therapeutic alliance and with the potential to boost compliance with counseling services. It is imperative for counselors to normalize such adverse experiences as spousal loss for men since men tend to experience greater deterioration in life satisfaction after such losses. Further, counselors need to put more emphasis on providing valuable resources for older men to establish a greater social support system in efforts to have ample support during the time of loss. Widowed men need to be empathically encouraged to continue engagement with life and leisure activities. Widowed women may need to be encouraged to continue and even expand their social involvement because they are more likely to live longer and stay widowed for longer period of time than men do (Aldwin & Gilmer, 2013; AOA, 2010b).

Social connectedness and relationship might serve as a buffer for isolation. Also, women may further benefit from continued or increased engagement in any type of physical activities, such as walking, jogging, and gardening. Lastly, women might benefit from any type of social engagement and physical activity in order to feel good about themselves and therefore increase their independence. In efforts to prepare older couples for future life events, couples counseling would serve to help address issues related to spousal loss, social support, and leisure participation.

Limitations

Although every effort was made to develop a rigorous research design, there are certain limitations that are important to note. First, despite the fact that life satisfaction refers to a “global assessment of a person’s quality of life according to his or her chosen criteria” (Shin & Johnson, 1978, p. 478), participants were asked one question to assess this construct. To some extent, this measure might be limiting and may not accurately capture the complexity of such a construct. Next, my research included a life satisfaction change variable, which I utilized as a dependent variable in my study. Previously reviewed researchers cited in chapter two utilized life satisfaction as a dependent variable that was measured separately at pre-loss and post-loss. In previously cited research, pre-loss and post-loss life satisfaction variables were then correlated with leisure participation and other variables separately at pre-loss and post-loss resulting in multiple statistical analyses. Finally, the comparison was done between the pre-loss versus post-loss results. For my current study, I computed life satisfaction change variable based on pre-loss and post-loss life satisfaction measure and correlated other variables with it, allowing for more preciseness and accuracy in correlation and prediction analysis. A presence of life satisfaction change variable might be responsible for some insignificant relationship previously established as significant in reviewed literature based on comparison studies (e.g., time since spousal loss and life satisfaction).

Another limitation centers on the ACL database and its inclusion of data reported at certain fixed points in time known as waves. As mentioned earlier, the first wave occurred in 1986, followed by the second wave in 1989, the third wave in 1994, the

fourth wave in 2002 and the fifth wave in 2011/2012 (ACL, n.d.). For each given widowed individual, I selected the wave prior to spousal loss to measure variables such as life satisfaction and physical leisure participation as well as the first wave occurring after the time of spousal loss in order to re-measure these variables. Changes in both life satisfaction and leisure participation were obtained by taking the differences between the values of the respected variables at these two selected waves. A potential problem with this procedure is the possible lag of several years between the wave used for the prior assessment and the actual date of spousal loss, as well as between the wave used for the post assessment and the actual date of spousal loss. In such cases, the accuracy of both the life satisfaction and leisure participation measurements are more likely to be compromised by events (e.g., relocating, financial issues, and declining health) that are not related to the spousal loss as compared to cases where this lag is a shorter time span.

Although several potentially relevant predictor variables were considered in this study, two variables that were not reflected were health and social support, despite previous works in which authors indicated these two factors might have a major influence on life satisfaction of older adults (Tomas, Sancho, Gutierrez, & Galiana, 2014). The ACL database contained several items related to health and social support; however the nature of the data items for these factors was extremely varied. After reviewing literature provided by the ACL staff and previous researchers, as well as corresponding with the ACL staff regarding these factors, the complexity of the constructs, and lack of information about replicate weights made it difficult to determine how to weight factors related to health and social support together to obtain a composite measure.

The possibility of data entry/coding errors can have an effect on the validity and applicability of the results of the study. While the available ACL documentation provided no detailed information on how the data collected from the interviews were checked for coding or input errors both before and after entry into the database, the ACL codebook (ACL, n.d.) did provide guidelines regarding the handling of nonconventional responses (e.g., two ratings being given on a Likert Scale question or non-integer responses for age questions). The ACL codebook also outlined procedures to handle missing data as well as outlier responses (House, 2012). Such procedures do reduce that chance for erroneous results being inferred from the data.

All surveys that use subjective or self-report questions have a potential for less than honest responses. One potential reason for untruthful responses is a concept of self-enhancement bias wherein participants may be inclined to report more neutral or positive feelings/outcomes since they either consciously or unconsciously want to be perceived in a favorable light (Krueger, 1998). Another explanation for untruthful responses may be the Hawthorn effect, which serves as a threat to external validity or generalizability of a study (Mertens, 2014). It is likely that the idea of receiving special attention by the interviewer, or being singled out to participate from time to time in a longitudinal study was enough to motivate to increase good feelings and favorable responses while participating.

ACL survey had a 67% response rate, which is considered high for this type of study (Remler & Ryzin, 2011) and may minimize volunteer bias. Even so, one must consider the 33% of potential participants who did not respond to this survey. It is quite

possible that this group of non-respondents possesses certain underlying characteristics, which differ from the sampled set of participants, and more importantly, have an influence on the results (Remler & Ryzin, 2011). Nonresponse bias influences the results of the study making them less likely generalizable.

Finally, looking at the demographics and percentual representation of race and gender, one can see that the majority of participants were White (71%) and female (81%). Even though this racial and gender representation closely resembles the demographics of older adults living today (AOA, 2010a), it is important to note the lack of generalizability of results to people from other demographic groups.

Suggestions for Future Research

To improve the accuracy of future studies, statistical analyses should be run using replicate weights that reflect both the relative weight each participant contributes to the overall sample as well as the inherent variation amongst participants. Based on previous research findings (e.g., Janke et al., 2008; Nimrod, et al., 2009), which indicated possible relationships between physical health and social support with life satisfaction, I recommend incorporating those factors in future studies. Doing so, will hopefully provide a greater explanation of variance in life satisfaction. The ACL dataset provided various concepts and measures of social support resulting in difficulties to clearly define social support as a construct for my study. Similarly, physical health was assessed in a myriad of ways in the national survey making it challenging to use as a construct in my study. Future researchers might benefit from allowing extra time for such variables to be defined, constructed, and incorporated in their research.

To expand on this current topic, comparing life satisfaction changes of older adult widows, middle adult widows, and young adult widows might be beneficial to further determine if the current research findings hold true about the effect of age at time of loss on changes in life satisfaction. Such comparisons would allow one to explore potential differences in degree of overall life satisfaction change in younger versus older widows/widowers as well as possible differences in the factors which influence the life satisfaction changes between the younger and older groups. Further, to expand on my study, it might be beneficial to examine if life satisfaction remains unchanged after other types of losses in life beyond spousal loss (e.g., loss of a child, parent, sibling, loss of job). For example, I suggest performing a study to investigate the impact of divorce on overall life satisfaction and to explore whether life satisfaction change after a divorce is similar to that after being widowed as well as whether these events are influenced by similar factors. Also, it might be helpful to conduct a similar study but focused on widowed older adults from racial minority groups to determine if there are gender differences between minority groups.

To better capture the complexity of the construct of life satisfaction of older adults, I recommend utilizing a measure that goes beyond one question. One complex and reliable assessment of life satisfaction to consider is Fordyce's (1985) *The Psychap Inventory*. This inventory measures how happy an individual is as a person and produces five scores: Achieved Personal Happiness, Happy Personality, Happy Attitudes and Values, Happiness Lifestyle and Total Score (Fordyce, 1985). The first subscale, Achieved Personal Happiness, has 16 items and has fairly high reliability and validity

(Fordyce, 1985). Another instrument that can be considered to measure life satisfaction is *The Five Factor Wellness Inventory* consisting of five subscales including Life Satisfaction (Myers & Sweeny, 2005). Lastly, commonly used The Life Satisfaction Index (LSI) test developed by Neugarten, Havinghurst, and Tobin (1961) examines the mean life satisfaction score. It was comprised of 20 items concerning dimensions of subjective life satisfaction at an advanced age including enjoyment of daily activities, perceiving life as meaningful, a sense of success in achieving principle life goals, a positive self-image, optimism, and general happiness.

Lastly, future researchers might benefit from incorporating a qualitative approach to delve more deeply into some of the inconsistencies between reviewed literature and results of this present study. Based on lessons learned from conducting this study, I would develop a longitudinal study using a mixed methods approach for assessing changes in life satisfaction of older adults after widowhood. Using a mixed methods approach would allow me to explore pre- and post-widowhood issues faced by older adults, which may have an influence on overall life satisfaction. If such factors (and/or other factors) emerge as themes from a qualitative component of the study, it would be beneficial to assess the construct of life satisfaction in a large sample of older adults via quantitative measures (e.g., inventories or questionnaires) to add to the qualitative component of research. Doing so would allow results to be generalized to a broader population of older adults.

Future Directions

In addition to the general limitations and future research suggestions outlined above, in this section I describe future directions for my research using the ACL dataset. These future directions are designed to produce more pronounced results, which can best explain inconsistencies between my current results with various aspects of the reviewed literature. It is also my hope that my future directions will help explain more than 9% of the variation in the dependent variable noted in my current study.

First, I plan on defining the dependent and independent variables differently. While still using the ACL database (ACL, n.d.), in my next model, I would define the dependent variable as the level of current life satisfaction and the independent variable as the current level of physical leisure participation (i.e., at wave four or wave five of the ACL dataset– post-loss). The values of the current life satisfaction variable as measured in the ACL database range from 1 (completely satisfied) to 5 (not at all satisfied) (ACL, n.d.). I would create a parallel variable in which the five categories are reversed so that 1 represents least satisfied and 5 represents most satisfied with life. This may make it more understandable to readers, as many associate higher values as representing improvements. Similar to the current level of life satisfaction, values for the current level of physical leisure participation range from -1 (participating more than once a week) to 4 (not participating at all). I will create a parallel variable in which the four categories are reversed so that 1 represents not participating at all and 4 represents participating more than once a week in order to be more understandable to readers.

Second, I will include the following control variables in future studies: age at time of spousal loss, education level, employment status, SES, race, the level of life satisfaction prior to widowhood (i.e., pre-loss), social support, and health status. Including the last two variables (social support and health status) may increase the explanatory values of the results of my proposed next study as authors (e.g., Chen et al., 1999; Wilcox et al., 2003), have suggested that social support and health status are factors that influence the level of life satisfaction in older widowed adults.

Third, considering that I intend to measure influences on the current (i.e., post-loss, after entering widowhood) level of life satisfaction, the use of an ordinal logistic regression (OLR) model makes sense for my future direction. OLR is used to predict an ordinal dependent variable given one or more independent variables (Laerd, n.d.). OLR is an appropriate model because the current level of life satisfaction is an ordinal dependent variable measured on the 5-point Likert scale. I will check assumptions for OLR before proceeding. Similar to the hierarchical regression I used in my current study, the base OLR would include only the control variables. I will add one additional independent variable at a time to each subsequent regression model (e.g., starting with time since spousal loss, followed by both time since spousal loss and current physical leisure participation, and finally time since spousal loss, current physical leisure participation, and gender). In the final ORL model, I plan to include the control variables, all three independent variables, and an interaction term between current physical leisure participation and gender. The Nagelkerke pseudo- R^2 calculated for a given OLR model could be used to measure the explanatory capability of that model, and the difference in

the Nagelkerke pseudo- R^2 values between two consecutive models in the series would measure the predictive contribution of the variable added in the latter model (ReStore, n.d.).

Lastly, it will be beneficial to run sensitivity measures to determine the proportion of positives that are correctly identified as such (e.g., the percentage of widowed older adults being most satisfied are correctly identified as having high life satisfaction). This would be one way of determining which model has better predictive capability (ReStore, n.d.).

Hopefully, the modifications to some of the existing variables in my current study, as well as the introduction of new variables (e.g., social support and health status), will increase the proportion of the dependent variable that is explained by these predictors from the current 9% to a significantly higher percentage. This will provide a more complete understanding of the factors that contribute to the level of life satisfaction in widowed older adults. I anticipate that my future directions will yield results that are more consistent with the published findings of the reviewed literature as well aligning more precisely with the theoretical framework of this study utilizing both continuity and SOC theory discussed in detail in chapter two.

Conclusion

In this study I examined the relationship between the time since spousal loss and the life satisfaction change of widowed older adults while considering the influences of leisure precipitation change and gender. Results indicate no relationship between life satisfaction change and time since spousal loss. Analyses also suggest that there is a

statistically significant positive relationship between life satisfaction change and physical leisure participation change. Further, being a female is correlated with lower levels of deterioration in life satisfaction; however, the relationship between life satisfaction change and physical leisure participation change does not differ between females and males.

Based on some findings of this study, it might be beneficial to consider effective counseling approaches when dealing with members of the older population in counseling settings. Examples of such approaches include, but are not limited to, creating a supportive and validating environment, normalizing the experiences of widowed older adults, especially for men, and finally, providing plenty of resources to promote social connections and physical leisure engagement. Furthermore, positive effects of leisure participation on adjustment to widowhood and overall life satisfaction indicate that widowed older adults who remain active and involved in leisure activities may experience less deterioration in life satisfaction and therefore greater sense of well-being.

Despite the fact that this research has some limitations, I believe my study provides valuable insight about factors influencing life satisfaction after widowhood and, therefore, useful implications for counselors and counselor educators. My results provide evidence in support of continuity theory based in that not much change was found in physical leisure participation and life satisfaction pre-loss versus post-loss. Further, widowed older adult participants tended to continue to engage in the types and frequency of activities in which they engaged before losing their spouse.

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Appendix A

Institutional Review Board (IRB) Approval



Institutional Review Board
College Hall, Room 248
Office: 973-655-3021
Fax: 973-655-3022
www.montclair.edu/irb
reviewboard@mail.montclair.edu

August 3, 2015

Ms. Marcela Kepicova
58 Normandy Rd.
Clifton, NJ 07013

Re: Research Determination Form submitted on **August 3, 2015**

RDF #: **0121**

Project Title: **The Impact of Leisure, Gender, and Time Since Spousal Loss on the Life Satisfaction of Widowed Older Adults**


Dear Ms. Kepicova:

After review of your research determination form, your study was found to not fall under the description of research that requires IRB approval.

Although this study does not fall under 45 CFR 46 regulations, the MSU IRB strongly encourages you to follow the ethical and research guidelines posted on our website.

If you have any questions regarding the IRB requirements, please contact me at 973-655-5189, reviewboard@mail.montclair.edu, or the Institutional Review Board.

Sincerely yours,


Ms. Amy Krenzer
IRB Coordinator

cc: Dr. Harriet Glosoff, Faculty Sponsor
Ms. Amy Aiello, Graduate School

